COMPLETION OF WORK REPORT
AND
APPENDIX A THROUGH C

FINAL

Massachusetts Military Reservation
Training Range and Impact Area

Small Arms Berm Maintenance
Removal of Metallic Lead and Fixation of Leachable Lead

Prepared for:

NATIONAL GUARD BUREAU
ARLINGTON, VIRGINIA

pursuant to:

THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION I
Administrative Order SDWA I-97-1030

Prepared By:

Ogden Environmental and Energy Services, Inc.
Supervising Contractor
Westford, Massachusetts

and

Sevenson Environmental Services, Inc.
Treatment Contractor
Munster, Indiana

March 5, 1999

VOLUME I

HTP- 1855

OGDEN *ENVIRONMENTAL AND ENERGY SERVICES*

LETTER OF TRANSMITTAL

ATTENTION:

DATE: 3/5/99

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WE ARE SENDING YOU THE FOLLOWING:

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	1	Final Completion of Work Report for Massachusetts Military Reservation (MMR) Small Arms Berm Maintenance, Removal of Metallic Lead and Fixation of Leachable Lead

SIGNATURE: Scott Veenstra

239 Littleton Road, Suite 1B
Westford, MA 01886

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
NATIONAL GUARD BUREAU
111 SOUTH GEORGE MASON DRIVE
ARLINGTON, VA 22204-1382

March 5, 1999

ARNG Environmental Division

Ms. Jane Dolan
MMR Project Coordinator
U.S. Environmental Protection Agency
J.F.K. Federal Building
Boston, MA 02203-2211

Re: Final Completion of Work Report for Massachusetts Military Reservation (MMR) Small Arms Berm Maintenance, Removal of Metallic Lead and Fixation of Leachable Lead

Dear Ms. Dolan:

Ogden Environmental and Energy Services, Inc. will send separately the Final Completion of Work Report as required under the Administrative Orders. The report consists of three volumes, the first is “The Completion of Work Report” with Appendix A, B and C, the second is. Appendix D “Laboratory Analytical Data Reports”, and the third is Appendix E. “Small Arms Range Berms Survey Plats”. Appendix D and E are unchanged from the draft report and the only change will be an instruction letter changing the documents from draft to final. Appendix A, B and C will be sent to the Impact Area Review Team and regulatory agencies. Appendix’s D and E will not be re-sent, but will remain on file at the previous repositories with the updated cover

The Guard wishes to point out once again, that once work started, the lead removal project proceeded quickly and efficiently with the assistance and supervision of the on site EPA coordinator. We look forward to bringing closure to this particular portion of the second administrative order. If you have any additional questions or comments regarding the Final Report, please contact me at (703) 607-7961.

Sincerely,

RICHARD O. MURPHY
Lieutenant Colonel, NGB
Compliance and Restoration Branch Chief

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COMPLETION OF WORK REPORT

APPENDIX E

FINAL

Massachusetts Military Reservation
Training Range and Impact Area

Small Arms Berm Maintenance
Removal of Metallic Lead and Fixation of Leachable Lead

Prepared for:

NATIONAL GUARD BUREAU
ARLINGTON, VIRGINIA

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THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION I
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Prepared By:

Ogden Environmental and Energy Services, Inc.
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Westford, Massachusetts

and

Sevenson Environmental Services, Inc.
Treatment Contractor
Munster, Indiana

March 5, 1999

VOLUME III

COMPLETION OF WORK REPORT

APPENDIX D

FINAL

Massachusetts Military Reservation
Training Range and Impact Area

Small Arms Berm Maintenance
Removal of Metallic Lead and Fixation of Leachable Lead

Prepared for:

NATIONAL GUARD BUREAU
ARLINGTON, VIRGINIA

pursuant to:

THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION I
Administrative Order SDWA I-97-1030

Prepared By:

Ogden Environmental and Energy Services, Inc.
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Munster, Indiana

March 5, 1999

VOLUME II

COMPLETION OF WORK REPORT
AND
APPENDIX A THROUGH C

FINAL

Massachusetts Military Reservation
Training Range and Impact Area

Small Arms Berm Maintenance
Removal of Metallic Lead and Fixation of Leachable Lead

Prepared for:

NATIONAL GUARD BUREAU
ARLINGTON, VIRGINIA

pursuant to:

THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION I
Administrative Order SDWA I-97-1030

Prepared By:

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March 5, 1999

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Disclaimer: *This document has been prepared pursuant to a government administrative order (U.S. EPA Region I SDWA Docket No. 1030) and is subject to approval by the U.S. Environmental Protection Agency. The opinions, findings, and conclusions expressed are those of the authors and not those of the U.S. Environmental Protection Agency.*

COMPLETION OF WORK REPORT

EXECUTIVE SUMMARY

FINAL

Massachusetts Military Reservation
Training Range and Impact Area

Small Arms Berm Maintenance
Removal of Metallic Lead and Fixation of Leachable Lead

Prepared for:

NATIONAL GUARD BUREAU
ARLINGTON, VIRGINIA

pursuant to:

THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION I
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Prepared By:

Ogden Environmental and Energy Services, Inc.
Supervising Contractor
Westford, Massachusetts

and

Sevenson Environmental Services, Inc.
Treatment Contractor
Munster, Indiana

March 5, 1999

EXECUTIVE SUMMARY

The Berm Maintenance Project entailed lengthy negotiations with USEPA Region I representatives to build a consensus as to the regulations that were applicable to this pollution prevention activity proposed in response to Administrative Order SDWA I-97-1030. The negotiations resulted in the development of a Revised Work Plan dated January 14, 1998. This Revised Work Plan was accepted by USEPA Region I and the program began on February 5, 1998. The Revised Work Plan, under the daily supervision of the on-site USEPA Region I Project Coordinator, provided the guidance for the removal of metallic lead and chemical fixation of leachable lead in berm soils at small arms training ranges located at the Massachusetts Military Reservation (MMR) on Cape Cod, MA. Sixteen (16) bermed small arm ranges were addressed during the project, the soils containing TCLP leachable lead concentrations greater than 5.0 mg/L were removed during the excavation and/or treated in-situ. The subject ranges were A, B, C, D, E, G, H, I, J, K, KD, N, O, P, SE, and SW.

Ogden Environmental and Energy Services, Inc. (Ogden) functioned as the Supervising Contractor for the National Guard Bureau and Massachusetts National Guard for management of the project. Sevenson Environmental Services, Inc. (Sevenson) functioned as the treatment contractor and was responsible for meeting the performance criteria established in the Revised Work Plan utilizing their patented MAECTITE process to reduce (via chemical fixation) leachable lead in the berm soils.

The objective of the berm maintenance program was the removal of the maximum amount of lead munitions from small arms range berm soils, and to minimize the possibility of lead fines (particles too small for physical removal) migrating toward groundwater. The first phase of the program focused on sampling each of the range berms. Samples were collected and analyzed to determine the depth to which soils would be excavated and transported to a Central Processing Site for separation of lead munitions and application of MAECTITE to lead fines (the removal/transportation and application of MAECTITE is referred to as Ex-Situ Processing throughout the document). Through sampling it was also possible to determine the appropriate areas where MAECTITE could be applied directly to the range berms without excavation and transportation to the Central Processing Site (this process is referred to throughout the document as In-Situ Processing).

Sevenson's MAECTITE process uses a liquid reagent that easily permeates soil and immediately reacts with leachable lead present. The MAECTITE process chemically bonds (rather than physically bind) leachable lead into microscopic, hard, geochemically stable synthetic mineral crystals which form within the soil matrix. These mineral crystals primarily take the form of apatites and anglesites. These minerals are resistant to long term leaching as measured by USEPA established test methods. Apatite minerals are known to exist in the environment for millions of years. MAECTITE has been accepted into USEPA's Superfund Innovative Technology Program (SITE) and Prequalified

Offerers Procurement Strategy (PQOPS). MAECTITE has also been recommended by AFCEE's Technology Evaluation Program.

Approximately 1,125 soil samples were collected and analyzed, in accordance with the Sampling and Analysis Project Plan contained in the Revised Work Plan approved by USEPA. These samples, collected from each of the berms, were used to develop the general Ex-Situ and In-Situ maintenance and processing plan for each individual range. The intent of the sampling activities was to obtain sufficient information to guide the work, some modifications to work plans were made on-site in coordination with the USEPA Region I Project Coordinator.

Excavation of berm soils containing bullet fragments was driven by visual observation. Approximately 17,788 cubic yards of berm soils containing bullet fragments were removed from the subject ranges and taken to a central location for screening and chemical fixation of leachable lead (i.e., Ex-Situ Processing). The processing equipment was a multiple stage, integrated system accepted by USEPA for performance of the work.

Screening of the excavated soil was performed to separate recyclable bullet fragments. The chemical fixation successfully reduced TCLP leachable lead concentrations in 27,952 tons of soil to concentrations less (i.e., better) than USEPA's requirements for the project. This success was documented by the process confirmation samples collected and analyzed in accordance with the Sampling and Analysis Project Plan. These processed soils were subsequently reused for reconstruction of berms at the small arms ranges.

As required by USEPA, 286 soil samples were collected and analyzed from areas that were excavated, but not scheduled to receive additional In-Situ Processing, to confirm that the remaining soils did not contain more that 5.0 mg/L TCLP leachable lead. Analytical results for these post excavation samples document that the residual concentrations of TCLP leachable lead were less than the USEPA approved performance criteria. In the isolated cases where remaining soils did contain more than 5.0 mg/L TCLP leachable lead, the soils were processed via the In-Situ Processing method (see below).

Soils remaining at the berms after excavation activities, but still containing TCLP leachable lead concentrations greater than 5.0 mg/L were further processed in-place. This in-place processing (i.e., In-Situ Processing) was performed on 5,380 cubic yards of berm

soils to reduce the concentration of TCLP leachable lead to less than 5.0 mg/L (the established and USEPA accepted project performance criteria). This success was documented by the process confirmation samples collected and analyzed in accordance with the Sampling and Analysis Project Plan.

Highlights of the project include:

- Reduction of TCLP leachable lead by ex-situ processing of excavated berm soils to concentrations significantly better (i.e., lower) than USEPA's approved project performance criteria of 5.0 mg/L. In fact, TCLP leachable lead was reduced to less than 1.7 mg/L in 100 %, less than 0.8 mg/L in 98 %, and less than 0.50 mg/L in 96 % of the process confirmation samples analyzed for the ex-situ processed soils.
- Reduction of TCLP leachable lead by in-situ processing of on-range berm soils to concentrations significantly better (i.e., lower) than USEPA's approved project performance criteria of 5.0 mg/L. In fact, TCLP leachable lead was reduced to less than 0.6 mg/L in 100 % and less than 0.50 mg/L in 97 % of the process confirmation samples analyzed for the in-situ processed soils
- Typically, the highest TCLP leachable lead concentrations were detected within the first two (2) feet of soil within the berm face.
- Vertical migration of TCLP leachable lead (in concentrations greater than 5.0 mg/L) from berms was typically limited to less than ten (10) feet measured perpendicular to the face of the berm.
- The maximum penetration into a berm to remove recoverable bullet fragments was 16 feet at Range K. Note that this depth is not below ground surface but is a depth approximately perpendicular to the face of the berms.
- Collection and analysis of 1,125 pre-excavation berm soil samples to characterize the total lead and TCLP leachable lead concentrations present as a result of small arms training activities.
- Total lead and TCLP leachable lead were observed at concentrations as high as 12,200 mg/kg and 734 mg/L, respectively.
- Analysis of 160 pre-excavation berm soil samples to characterize total copper, total iron, total nickel, and total antimony concentrations present.
- Excavation and transportation of 17,788 cubic yards of berm soils to a central processing area at an average production rate of over 300 cubic yards per day.
- Collection and analysis of 286 post-excavation berm soil samples for total lead and TCLP leachable lead to confirm remaining soils contained less than 5.0 mg/L TCLP leachable lead.
- Analysis of 31 post-excavation berm soil samples to characterize total copper, total iron, total nickel, and total antimony present.

- Screening of the excavated berm soils for recovery of recyclable bullet fragments at the central processing area in an enclosed screening and processing system.
- Chemical fixation of leachable lead in 27,952 tons of screened range berm soils at an average production rate of over 450 tons per day.
- Chemical fixation of leachable lead in 5,380 cubic yards of berm soils without removing the soil from the ranges at an average production rate of 150 cubic yards per day.
- Reconstruction of the berms at two ranges to expedite the MAARNG's return to small arms training.
- Completion of the required activities five (5) weeks ahead of the schedule required by the Administrative Order.
- Completion of the field activities without a lost time accident.
- Completion of the activities under the daily oversight of USEPA's full-time on-site representative.

This project was a success as the berm maintenance program implemented at MMR was successful in removing metallic lead and chemically fixing leachable lead in the berm soils at 16 small arms ranges as required by USEPA's Administrative Order. The patented MAECTITE process not only achieved, but exceeded, the performance criteria for reduction of TCLP leachable lead in berm soils. The range berm maintenance program and use of innovative technology provided a cost-effective solution to removing metallic lead from the environment and minimizing the possibility of leachable lead migrating into the underlying groundwater aquifer.

1.0 INTRODUCTION

Ogden Environmental and Energy Services, Inc. (Ogden) was retained by the National Guard Bureau (NGB) and accepted by the United States Environmental Protection Agency (USEPA) as Supervising Contractor for performing the work required by USEPA Region I's Administrative Order No. SDWA-I-97-1030. Ogden in turn subcontracted Sevenson Environmental Services, Inc. (Sevenson) as the Treatment Contractor. This team of Ogden and Sevenson was responsible for the development of a Draft Work Plan, responding to USEPA and Massachusetts Department of Environmental Protection (MADEP) comments, supporting NGB during negotiations with the USEPA and MADEP, developing a Revised Work Plan, implementation of the activities described in the Revised Work Plan, and development of this Completion of Work Report (Report).

This Report is intended to provide the reader with an overview of the activities implemented to remove metallic lead and chemically fix leachable lead in soils at 16 bermed small arms training ranges at the Massachusetts Military Reservation (MMR) located on Cape Cod, MA.

The Report is organized to provide an overview of the scope of activities (Section 2.0), present a summary of the laboratory data generated during the activities (Section 3.0), present an evaluation of the field laboratory data compared to the off-site laboratory data (Section 4.0), provide a listing of reference documents (Section 5.0), and provide a statement of completion of work as required by the Administrative Order (Section 6.0).

Appendices contain supporting documentation for the report.

2.0 SCOPE OF ACTIVITIES

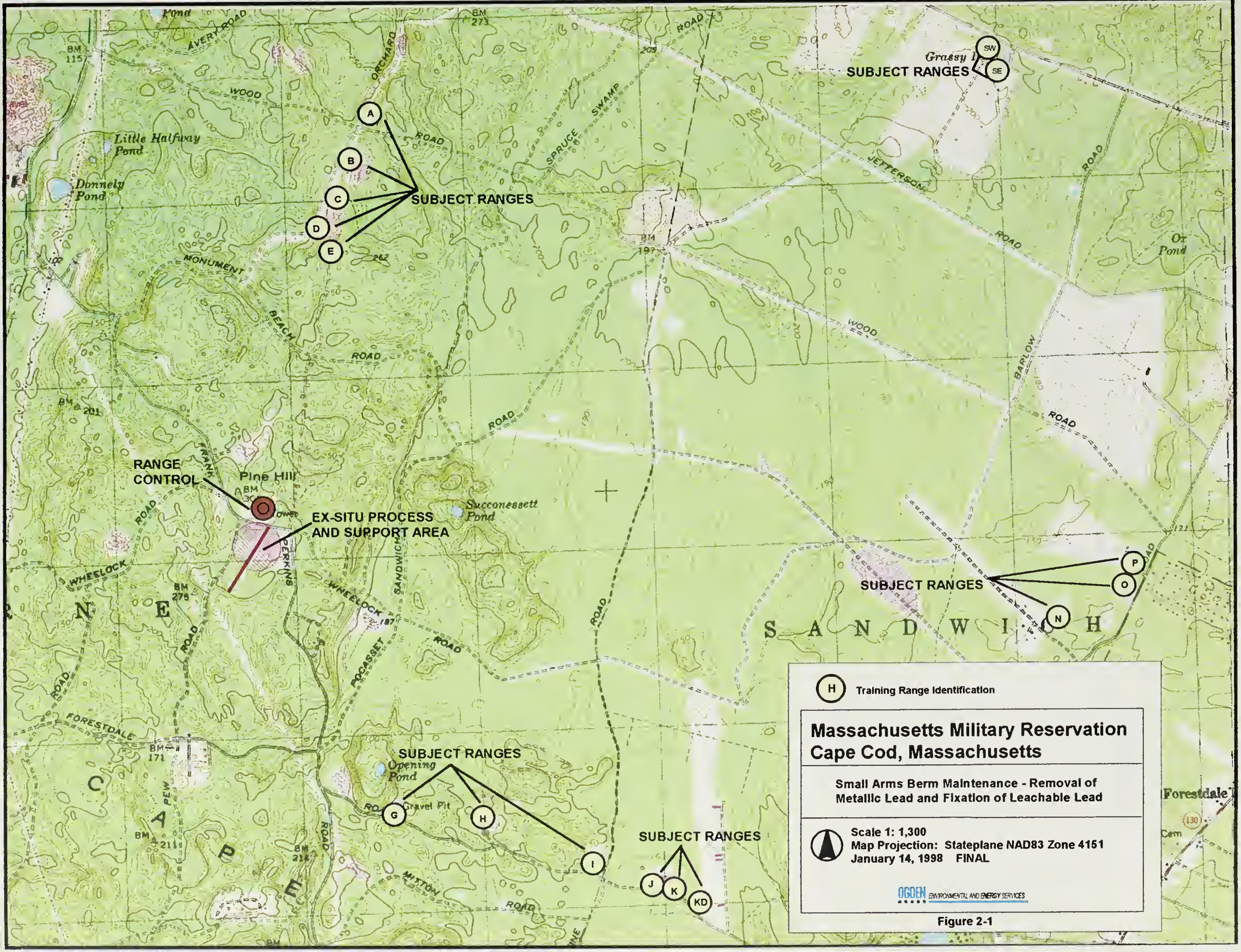
2.1 Work Plan Development

Ogden and Sevenson prepared a Draft Work Plan (dated August 29, 1997). This Draft Work Plan was submitted to USEPA and MADEP for review and comment. Comments were received on October 1, 1997 from MADEP and on October 10, 1997 from USEPA. Lengthy negotiations concerning applicable regulations and project performance criteria occurred during the time between receipt of comments on the Draft Work Plan and issuance of the conditional letter of approval referenced below. Ogden, on behalf of NGB, submitted responses to USEPA and MADEP comments on October 24, 1997.

USEPA provided condition approval (dated December 24, 1997) of the Draft Work Plan based upon the results of the negotiations with NGB. A Revised Work Plan was prepared to incorporate the changes agreed upon by NGB and USEPA. This Revised Work Plan was submitted to USEPA and MADEP. USEPA subsequently issued a letter of approval (dated January 30, 1998) of the Revised Work Plan.

Some of the highlights of the Revised Work Plan and USEPA's acceptance of the Revised Work Plan included requirements for the following:

- Removal of metallic lead (i.e., bullet fragments) and chemical fixation of leachable lead (as determined by the TCLP analytical method) in berm soils at 16 bermed small arms ranges including Ranges A, B, C, D, E, G, H, I, J, K, KD, N, O, P, SE and SW (as noted on Figure 2-1).
- Excavation, transportation to the Central Processing Area, and ex-situ MAECTITE processing of berm soils containing recoverable bullet fragments.
- Ex-situ MAECTITE processing of berm soils containing TCLP leachable lead in concentrations exceeding 5.0 mg/L after screening of recoverable bullet fragments.
- Integrated ex-situ processing system (i.e., continuous process once material was loaded onto the initial screen and totally enclosed after the screened soils entered the pugmill for blending with MAECTITE).
- Confirmation of successful ex-situ processing within 90 days from excavation of soils from a given range.
- In-situ MAECTITE processing of berm soils not containing recoverable bullet fragments but still containing TCLP leachable lead in concentrations exceeding 5.0 mg/L.
- Processing of soils containing TCLP leachable lead greater than 5.0 mg/L to a project performance goal concentration less than 5.0 mg/L.
- Aggressive dust control in all areas of project activity.
- Analysis of all soil samples for both TCLP leachable lead and total lead.
- Analysis of 10 % of the soil samples (those sent off-site for QA/QC purposes) for total antimony, copper, nickel, and iron in addition to the base requirement for analysis of total lead and TCLP leachable lead.
- Completion of field activities by not later than July 30, 1998.



**Massachusetts Military Reservation
Cape Cod, Massachusetts**

Small Arms Berm Maintenance - Removal of Metallic Lead and Fixation of Leachable Lead

Scale 1: 1,300
Map Projection: Stateplane NAD83 Zone 4151
January 14, 1998 FINAL

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

Figure 2-1

2.2 Berm Survey

Cape Surv (Sevenson's subcontractor) conducted pre-excavation surveys of the berms to form a baseline for calculations of excavation volumes. Photographs of the berms prior to excavation are included in Appendix C. Post-excavation surveys were performed after completion of soil excavation activities. An average end area method was utilized to calculate the volume of soils excavated from each range. Copies of the pre- and post-excavation survey plats are contained in Appendix E (Volume III).

2.3 Mobilization

Ogden and Sevenson mobilized field personnel, site support facilities (office trailers, lunch trailer, decontamination trailer, small equipment storage trailer, sanitary facilities), mobile laboratory trailers, heavy equipment (excavators, dozers, loaders, skid loader, tandem axle dump trucks, water trucks), and processing equipment (screening equipment, pugmill, storage silos, liquid storage tanker) to the site beginning the week of January 21, 1998. Field crews were on-site immediately after NGB's receipt of USEPA's January 30, 1998 letter providing approval of the Revised Work Plan.

The temporary site support facilities and ex-situ processing equipment were established at the location near Range Control as proposed in the Revised Work Plan. See Figure 2-1 for the location of the site support and ex-situ process area. Photographs of the support area and process equipment set-up are contained in Appendix C. The processing area, including stockpiles were surrounded with temporary fencing to designate the restricted work area and provide controlled access (i.e., limit access to the work site by unauthorized personnel).

MAECTITE was sprayed on the ground surface in all areas for stockpiling of materials (pre-processing, post-processing, oversize, and No. 4 retained) prior to material being stockpiled.

Equipment refueling operations were reviewed with the Fire Marshall and a refueling permit obtained for the duration of the project. In addition, a backup self-contained (i.e., included integrated secondary containment) storage tank was mobilized to the site and a permit obtained.

2.4 Pre-Excavation Sampling and Analysis

Ogden, Sevenson, and USEPA's on-site representative worked together to select and visually identify pre-excavation sample collection locations based on agreed upon lateral spacing of 25 feet. Identification of pre-excavation sample collection started on February 16, 1998. Sevenson personnel and subcontractor collected pre-excavation samples from the berms.

Sample collection was initiated utilizing the methods identified in the Revised Work Plan (manual and/or hydraulic push) but were found to be inefficient at obtaining sufficient sample volumes based upon the material types encountered beyond the initial two feet of the berms. Working with USEPA's on-site representative, alternative methods (i.e., backhoe trenching) were implemented for the pre-excavation sample collect. Pre-excavation samples were initially collected in two foot intervals to a depth of six feet. In locations were the laboratory analytical results indicated TCLP leachable lead at concentrations greater than 5.0 mg/L, additional samples were collected at two foot intervals from those locations to depths that the TCLP leachable lead concentrations were less than 5.0 mg/L. "Depths" refer to either vertical distance below the ground surface into the toe of a berm or the distance into the face of a berm approximately perpendicular to the face.

Based upon a field agreement with USEPA's on-site representative, each of the small pop-up target protectors at Range E were excavated flush with the surrounding ground surface and transported to the central processing area based upon the presence of visible bullet fragments. Pre-excavation soil samples were not collected from the pop-up target protectors prior to excavation as the field agreement stipulated removal of the entire pop-up protector.

Based upon a field agreement with USEPA's on-site representative, soils were excavated from the large pop-up target protectors on Ranges SE and SW based on the presence of visible bullet fragments. An agreed upon number of post-excavation samples were collected and confirmed that TCLP leachable lead concentrations were less than 5.0 mg/L in the soils remaining at the pop-up target protectors.

Due to delays is obtaining electrical service at the field office trailer and mobile laboratory area, the collected pre-excavation soil samples were initially shipped off-site for analysis at Waste Stream Technologies, Inc. Samples shipped off-site initially included samples from Ranges G, H, K, KD, and O. Upon obtaining electrical service and completion of calibration of the mobile laboratory equipment, sample analysis was conduced on-site in the mobile laboratory. As required by the Revised Work Plan and Project Quality Assurance Plant, approximately 10 % of the samples analyzed in the onsite laboratory were also analyzed at Waste Stream Technologies for QA/QC review purposes.

A total of 1,125 discrete pre-excavation samples were collected and analyzed for total lead and TCLP leachable lead. Of the 1,125 samples, 821 were analyzed on-site and 304 were analyzed off-site. Of the 1,125 samples, 160 were analyzed off-site for total metals including total antimony, total copper, total nickel, and total iron in addition to the baseline requirement for analysis of total lead and TCLP leachable lead. An additional 96 samples were analyzed for total lead and TCLP leachable lead as duplicates at Waste Stream Technologies for QA/QC purposes. The Table 2-1 provides a summary by range of the number of pre-excavation soil samples collected.

Table 2-1
Pre-Excavation Berm Soil Sample Collection

Range	Number of Pre-Excavation Samples Analyzed
A	86 On-Site TCLP/Total Lead 8 Off-Site QA/QC & Total Metals
B	183 On-Site TCLP/Total Lead 17 Off-Site QA/QC & Total Metals
C	123 On-Site TCLP/Total Lead 14 Off-Site QA/QC & Total Metals
D	24 On-Site TCLP/Total Lead 2 Off-Site QA/QC & Total Metals
E	114 On-Site TCLP/Total Lead 12 Off-Site QA/QC & Total Metals
G	43 Off-Site TCLP/Total Lead 2 Off-Site QA/QC & Total Metals
H	9 On-Site TCLP/Total Lead 64 Off-Site TCLP/Total Lead/Total Metals
I	118 On-Site TCLP/Total Lead 11 Off-Site QA/QC & Total Metals
J	56 Off-Site TCLP/Total Lead 5 Off-Site QA/QC & Total Metals
K	2 On-Site TCLP/Total Lead 54 Off-Site TCLP/Total Lead 5 Off-Site QA/QC & Total Metals
KD	39 Off-Site TCLP/Total Metals 4 Off-Site QA/QC & Total Metals
N	96 On-Site TCLP/Total Lead 9 Off-Site QA/QC & Total Metals
O	5 On-Site TCLP/Total Lead 48 Off-Site TCLP/Total Lead 1 Off-Site QA/QC & Total Metals
P	61 On-Site TCLP/Total Lead 6 Off-Site QA/QC & Total Metals
SE	N.A.
SW	N.A.
	1,125 TCLP/Total Lead **160 Total Metals** **96 QA/QC**

2.5 Data Review and Individual Range Processing Plan Development

Upon receipt and review of the pre-excavation sample analytical data, range specific processing plans were developed. The range specific processing plans were a simple, easy to understand graphical representation of the berm with the method of processing (ex-situ vs. in-situ) identified based upon the reported concentration of TCLP leachable lead compared to the project performance criteria of 5.0 mg/L TCLP leachable lead. These plans were utilized by the excavation crew in conjunction with visual criteria for recoverable bullet fragments to determine the limits of excavation or in-situ MAECTITE processing.

Copies of the pre-excavation sample analytical data were provided to USEPA's on-site representative during the project upon receipt of QC reviewed data for a given range.

Summary tables for the pre-excavation soil sample analytical data are presented in Section 3. The actual laboratory analytical reports are contained in Appendix D (Volume II).

Section 4 presents an evaluation of the mobile laboratory data and the off-site laboratory data. The data evaluation demonstrates a high degree of consistency between the mobile laboratory and off-site laboratory results, confirming that the mobile laboratory was a reliable substitute for the off-site laboratory.

Table 2-2 provides a range by range summary of the highest reported concentrations of TCLP leachable lead, total lead, total copper, total iron, total nickel, and total antimony in the pre-excavation berm soil samples. The maximum concentrations reported in the pre-excavation soil samples were as follows: TCLP leachable lead (734.1 mg/L), total lead (12,200 mg/kg), total copper (191 mg/kg), total iron (15,500 mg/kg), total nickel (78 mg/kg), and total antimony (59.8 mg/kg).

Table 2-2
Highest Observed Metals Concentrations
Pre-Excavation Berm Soil Samples

Range	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
A	84.29	2,119	107	7,750	1.9	< 1.0
B	734.1	11,546	54.4	5,010	3.0	3.2
C	91.33	1,339.7	5.8	2,250	< 1.0	2.8
D	250.3	5,003	191.0	3,320	1.5	6.3
E	6.21	290.8	10.4	3,860	1.7	< 1.0
G	525	12,200	9.3	3,960	1.7	< 1.0
H	181	3,670	115	15,500	7.4	10.5
I	325.3	2,703	183.0	6,440	78.0	59.8
J	251	5,090	148.0	11,540	12.0	9.6
K	315	4,450	69.5	10,500	6.2	< 1.0
KD	5.7	130	6.7	8,820	21.1	< 1.0
N	43.78	1,668	5.4	8,900	7.5	< 1.0
O	126	2,392	44.6	9,020	7.2	< 1.0
P	32.76	1,189.9	85.4	12,400	7.5	< 1.0
SE	--	--	--	--	--	--
SW	--	--	--	--	--	--

NOTES:

This table indicates the highest reported concentrations of individual metals in pre-excavation soils samples.

Analytical methods were as follows:
- *TCLP leachable lead by 40 CFR, Part 268, Appendix I (TCLP) SW-846, Method 1311 followed by USEPA Method 7420.*
- *Total Lead, Total Copper, Total Iron, Total Nickel, and Total Antimony by SW-846, Method 6010.*

All final Post-Excavation Confirmation samples confirmed that TCLP leachable lead concentrations in soils left in-place were less than 5.0 mg/L.

*All In-Situ Process Confirmation samples confirmed that TCLP leachable lead concentrations were reduced to less than 5.0 mg/L (*100 % < 0.6 mg/L and 97 % < 0.5 mg/L).

All Ex-Situ Process Confirmation samples confirmed that TCLP leachable lead concentrations were reduced to less than 5.0 mg/L (100% < 1.7 mg/L, 98 % < 0.8 mg/L, and 96 % < 0.5 mg/L).

2.6 Excavation and Transportation

Initially, clearance of the range berms for UXO related material was not necessary, however, after encountering UXO at Range I and suspected UXO related materials at Range O during excavation, the assistance of the Air National Guard 102 EOD personnel was obtained. The EOD personnel conducted sweeps for UXO material at the remaining ranges prior to initiation of excavation activities in order to maintain a safe work environment for the excavation crews.

Site control was established at each of the individual ranges prior to commencing excavation activities. The site control measures were comprised of rope barriers to delineate the exclusion zone with appropriate warning signs posted. A contamination reduction zone was also established for both personnel and vehicles.

Soils were excavated from the berms according to visual criteria (presence of recoverable bullet fragments). USEPA's on-site representative accepted the depth of excavation at each of the ranges based upon his personal inspection of the berm surface. The sections of a given berm excavated on a particular day were noted in the daily production reports. Copies of the range specific excavation plans (as actually completed) are included in Appendix A.

Excavation and transportation activities commenced on February 27, 1998 beginning at Range G and were completed on June 11, 1998 at Range A. The excavation activities were completed three (3) weeks ahead of the project schedule (as submitted with Progress Report No. 6 dated March 10, 1998) despite incurring 15 days of weather related delays and three (3) days of UXO clearance support delays. A total of 17,788 cubic yards of berm soils were excavated and transported to the Central Processing Area. Table 2-3 presents a range by range summary of the quantity of soil excavated.

Soils not containing bullet fragments, but still containing TCLP leachable lead greater than 5.0 mg/L based upon the data from the pre-excavation sample collection and analysis efforts, were left in-place to be addressed by in-situ methods described in Section 2-9.

The maximum excavation of a berm to remove recoverable bullet fragments was 16 feet into the berm at Range K. Ranges A and H were also excavated further into the berm (10 feet at each range) than was originally thought would be necessary. This indicates that the berms may have been refaced sometime in the past. Note that these "depths" are not below ground surface but are approximately perpendicular to the original face of the berms. Photographs of the berms during and after completion of excavation activities are included in Appendix C.

The excavated soils were directly loaded into tandem axle dump trucks or stockpiled in the toe area of the berm for loading when trucks were unavailable. The trucks were decontaminated as discussed below, and the soils covered with a tarp for transportation to the central processing area.

Table 2-3
Summary of Soil Excavation Quantities

Range	Quantity of Soil Excavated (cubic yards)
A	3328
B	1869
C	1360
D	207
E - Berm E - Pop-ups	1201 493
G	955
H	693
I	527
J	697
K	2699
KD	380
N	540
O	410
P	904
SE Pop-ups	693
SW Pop-ups	832
Total Quantity Excavated	**17,788 cubic yards**

Delays in the excavation activities were incurred during work at Ranges I, J, and O. These delays were related to encountering UXO (Range I), buried drums (Range J), and suspected UXO related material (Range O). Each of these un-anticipated events is briefly discussed below.

When in-situ processing crews discovered a suspected UXO in the toe of the secondary berm on Range I, all work activities were immediately halted. Range Control personnel at MMR were contacted and the MAANG 102nd Explosives and Ordinance Demolition (EOD) personnel were contacted. The EOD responded and determined that the suspected UXO was indeed "live" and subsequently restricted access to the area. Due to EOD's assessment of the condition of the round, EOD determined that it was safest to demolish the round in-place instead of attempting to move the round to a demolition area. After obtaining USEPA's approval, the UXO was demolished in-place by EOD. According to EOD personnel, the round was a luminary round, not a high explosives round. Photographs of the round before and after demolition are included in Appendix C.

Excavation activities in the left most portion of the berm at Range J uncovered approximately 40 drums. The drums were 55-gallon, steel drums with holes punched in the bottom of the drums, the tops bend partially open, and filled with sand. Even though MMR personnel thought that the drums were previously used as target holders (40 drums at two per each of 20 firing positions), the MADEP was contacted by MAARNG personnel to respond to the discovery of the drums. MADEP's contractor Cyn Environmental Services was responsible for the characterization of the sand contained in the drums. The sand contained in the drums was not contaminated, based upon analysis of samples collected by Cyn Environmental Services. After obtaining the analytical results, MAARNG personnel were to submit follow-up paperwork to the MADEP concerning the drums. MMR personnel emptied and removed the drums from the Range. Upon removal of the drums, excavation of the left most portion of the Range J berm was completed. Photographs of the subject drums are included in Appendix C.

Additional suspected UXO material was discovered during excavation activities at the berms on Range O. Again, EOD personnel were contacted to respond to the situation. EOD personnel determined that the suspected UXO were not "live", but rather a spent rocket propellant unit and four (4) spent or dud fin rockets. EOD personnel removed the materials from the area and excavation activities resumed. Photographs of these suspected UXO materials are included in Appendix C.

Dust control was provided as necessary during excavation via a water spray. A water truck was present at the range during excavation activities. Minimal dust control was necessary as the berm soils tended to maintain a fairly moderate to high moisture content and visible dust was rarely observed during implementation of the work.

Air monitoring was conducted in accordance with Section 22.0 of the Health and Safety Plan included in the Revised Work Plan. Typically, down wind concentrations were no higher than up wind (or background) results. In the isolated cases where down wind

readings were higher than up wind (or background), readings were still less than an order of magnitude higher. At no time during site activities did the work generate enough dust to require an upgrade of respiratory protection to air purifying respirators. All operations were conducted without the need to provide worker respiratory protection. Section 3.2 further discusses the results of air monitoring activities.

Erosion control measures were deemed necessary at Range H based upon the field conditions encountered. USEPA's on-site representative informed the on-site Ogden representative that Sevenson needed to install erosion control measures at this range. The necessary erosion control measures were installed prior to work beginning at the range.

Decontamination of personnel at the ranges was accomplished in accordance with the project health and safety plan (included in the Revised Work Plan) within the established contamination reduction zones. Vehicles were decontaminated via dry methods (i.e., shovel and broom) to remove gross accumulation of soils from the exterior of vehicles transporting the excavated soils to the central processing area. Equipment was decontaminated via dry methods (i.e., shovel and broom) to remove gross accumulation of soils from the exterior of equipment prior to transportation to the next range. USEPA's on-site representative accepted this method as adequate.

2.7 Post Excavation Sampling and Analysis

Upon completion of excavation activities at a given range, post-excavation soil samples were collected to document residual concentrations of TCLP leachable lead in sections of the berm not scheduled to receive in-situ MAECTITE processing. Samples were collected at the mid-point between pre-excavation sample locations as required by USEPA's Conditional Approval letter dated December 24, 1997. The post-excavation soil samples were analyzed for both total lead and TCLP leachable lead. The TCLP leachable lead concentrations were utilized to confirm that excavation activities had accomplished the project goal of removing berm soils containing TCLP leachable lead at concentrations greater than 5.0 mg/L. All of the post-excavation data met the project performance criteria.

The post-excavation sample analytical data was submitted to USEPA's on-site representative throughout the project upon receipt of QC reviewed data for a given range.

A total of 286 discrete post-excavation samples were collected and analyzed on-site for total lead and TCLP leachable lead. Of the 286 samples, 31 were randomly selected and analyzed for total lead and TCLP leachable lead as duplicates at Waste Stream Technologies for QA/QC purposes. These 31 samples were also analyzed by Waste Stream Technologies for total metals including total antimony, total copper, total nickel, and total iron. The analyses for total metals was performed to meet USEPA's request that pre-excavation and post-excavation samples sent off-site for QA/QC would be analyzed for total metals in addition to the baseline requirement for analysis of total lead and TCLP leachable lead. NGB agreed to this request for total metal analyses as a good

management practice. Table 2-4 provides a summary by range of the number of post-excavation soil samples collected.

Summary tables for the post-excavation soil sample analytical data are presented in Section 3. The actual laboratory analytical reports are contained in Appendix D (Volume II).

Section 4 presents an evaluation of the mobile laboratory data and the off-site laboratory data. The data evaluation demonstrates a high degree of consistency between the mobile laboratory and off-site laboratory results, confirming that the mobile laboratory was a reliable substitute for the off-site laboratory.

Table 2-4
Post-Excavation Berm Soil Sample Collection

Range	Number of Post-Excavation Samples Analyzed
A	39 On-Site TCLP/Total Lead 3 Off-Site QA/QC & Total Metals
B	49 On-Site TCLP/Total Lead 6 Off-Site QA/QC & Total Metals
C	30 On-Site TCLP/Total Lead 3 Off-Site QA/QC & Total Metals
D	5 On-Site TCLP/Total Lead 1 Off-Site QA/QC & Total Metals
E	26 On-Site TCLP/Total Lead 3 Off-Site QA/QC & Total Metals
G	13 On-Site TCLP/Total Lead 2 Off-Site QA/QC & Total Metals
H	23 On-Site TCLP/Total Lead 1 Off-Site QA/QC & Total Metals
I	12 On-Site TCLP/Total Lead
J	13 On-Site TCLP/Total Lead 1 Off-Site QA/QC & Total Metals
K	11 On-Site TCLP/Total Lead 2 Off-Site QA/QC & Total Metals
KD	6 On-Site TCLP/Total Lead 1 Off-Site QA/QC & Total Metals
N	15 On-Site TCLP/Total Lead 2 Off-Site QA/QC & Total Metals
O	11 On-Site TCLP/Total Lead 2 Off-Site QA/QC & Total Metals
P	12 On-Site TCLP/Total Lead 2 Off-Site QA/QC & Total Metals
SE	7 On-Site TCLP/Total Lead
SW	14 On-Site TCLP/Total Lead 2 Off-Site QA/QC & Total Metals
	286 TCLP/Total Lead **31 Total Metals** **31 QA/QC**

2.8 Ex-Situ Processing

The ex-situ MAECTITE process is a chemical fixation that immobilizes leachable lead by chemically bonding leachable lead. The product formed from the reaction are geochemcially stable synthetic mineral crystals within the soil matrix. The crystals are primarily apatites and anglesites. The product of the MAECTITE reaction does not need to be maintained in a specific pH range to remain insoluble. The material processed with MAECTITE is stable and the bioavailability of lead greatly reduced.

The ex-situ processing equipment was setup as presented in the Revised Work Plan with the additional modification of being a continuous process once material was loaded onto the initial screen and totally enclosed after the screened soils and MAECTITE entered the pugmill. These modifications were stipulated by USEPA's letter of Approval (dated January 30, 1998) of the Revised Work Plan. Photographs of the processing equipment are included in Appendix C.

Excavated soils transported from the small arms range berms were stockpiled on an area sprayed with MAECTITE prior to the first load of excavated material being delivered to the central processing area.

The excavated soils were dumped in the pre-processing soil stockpile area. A dozer pushed the material towards the screening operation into a stockpile. Composite samples of the pre-processing soil stockpile were collected by Sevenson and analyzed for TCLP leachable lead. The purpose of the pre-processing sample collection and analysis was to confirm that the soils to be processed were within an acceptable range of TCLP leachable lead concentrations for the MAECTITE dose rate being utilized in the ex-situ process.

Because of the requirement for post-processing sample collection and analysis, USEPA's on-site representative advised the Supervising Contractor that he would not require the collection and analysis of pre-processing soil samples provided that all soils passing through the pug mill would receive an application of MAECTITE. This was agreed to so that the processing of the soils would not be delayed for pre-processing analytical results. All soils passing through the pug mill received an application of MAECTITE per this field agreement.

The pre-processing soil stockpile was fed into the first section of the screening plant utilizing a track excavator. The first section of the screening plant consisted of a 6-inch shredder unit that the soil was feed into from the top. Large oversize rocks were removed from the top of the screen (stockpiled elsewhere on-site) and the material passing the 6-inch screen moved via an elevating conveyor to the top of the next screening step. At the discharge of the elevating conveyor, the materials dropped onto screen stack consisting of a 2-inch screen and a No. 4 screen.

Oversized material retained on the 2-inch screen (stones larger than 2 inches) fell off to the side of the screening operation and were relocated to an oversize material stockpile

for management by the MAARNG. This material was relocated with a rubber tire loader to a oversize stockpile area. The stockpile area had been sprayed with MAECTITE prior to the oversize material being placed on the ground.

Approximately 289 cubic yards of oversize material was sprayed with MAECTITE as specified in the Revised Work Plan before the MAARNG and USEPA's on-site representative discussed potential alternative uses for the material, other than being returned to the small arms ranges. The NGB instructed the Supervising Contractor to stop MAECTITE application to the oversize material pending MAARNG submittal of a plan to USEPA concerning alternate methods to render the oversize material suitable for alternative uses. Approximately 750 cubic yards of non-MAECTITED oversize material was left stockpiled at the central processing area.

Material retained on the No. 4 screen (bullet fragments, bullet jacketing, small stones) was shaken off onto a stack-off conveyor. The stack-off conveyor piled the No. 4 retained material beside the screening operation for management for recycling by the MAARNG. Due to the rapid accumulation of material retained on the No. 4 screen and limited space available in the central processing area, the No. 4 retained material was relocated with a rubber tire loader to a separate stockpile area. This stockpile area had also been sprayed with MAECTITE prior to the No. 4 retained material being placed on the ground. Due to high moisture content of the pre-processing stockpiled soils, some of the material retained on the No. 4 screen was found to still have soil adhering to the surface of the small stones. Materials displaying this characteristic were re-screened to maximize the soil processed with MAECTITE for return to the range berms.

Material passing both the 2-inch and No. 4 screens was fed directly into the pug mill hopper. From the pug mill hopper, the material was fed onto an inclined conveyor/weight belt for feed rate measurement and control. As the material entered the pug mill chamber (from the discharge end of the inclined conveyor/weight belt), liquid MAECTITE reagents and water were added along with lime kiln dust as a buffer agent for blending in the pug mill. The chemically fixed material discharged from the end of the pug mill onto the ground and was relocated with a rubber tired loader to post-processing soil stockpile locations.

A total of 56 post-processing soil samples were collected and analyzed to confirm that the ex-situ MAECTITE process had successfully reduced TCLP leachable lead to less than 5.0 mg/L. The processing confirmation samples were collected and analyzed in accordance with the Sampling and Analysis Project Plan (included as Section 3.0 in the Work Plan). Specifically, a random grab sample was collected representing every 50 tons of processed soils from every 500 ton lot processed. The ten (10) grab samples were composited and analyzed for TCLP leachable lead as confirmation for the 500 ton lot. None of the 56 lots (approximately 500 tons per lot) of processed soil failed to meet the established project performance criteria on the first processing attempt - no reprocessing was required.

In fact, the ex-situ process not only met but exceeded the project performance criteria:

⇒ 100 % less than 1.7 mg/L TCLP leachable lead.
⇒ 98 % less than 0.8 mg/L TCLP leachable lead.
⇒ 96 % less than 0.50 mg/L TCLP leachable lead.

The daily production reports included tracking of the daily quantity and total quantity to date of ex-situ MAECTITE processed material. Daily production rates varied through the project. The highest production rate achieved was 1,300 tons during a work day. The typical production rate was in the 400 to 600 tons per day range. The daily production rate varied due to moisture content of the soils and availability of stockpiled material. Ex-situ processing activities started on March 5, 1998 and were completed on June 15, 1998. The ex-situ processing activities were completed four (4) weeks ahead of the project schedule despite incurring 15 days of weather related delays and three (3) days of UXO clearance support delays. A total of 27,952 tons of screened berm soils were run through the process.

All ex-situ processing was completed and confirmation analytical results available for review within 90 days of the soils being excavated from a given range berm. In other words, less than 90 days transpired from the time soils were excavated from a berm, transported to the central processing area, run through the ex-situ process, processed material sampled and analyzed, and the analytical results reviewed to confirm compliance with project performance criteria of reducing TCLP leachable lead to less than 5.0 mg/L.

Additional dust control, beyond that occurring from the addition of liquid reagents and water in the pug mill, was not necessary during the ex-situ processing of berm soils due to the naturally high moisture content of the excavated materials. USEPA's on-site representative did not, during the course of the project, have to request increased dust control measures.

Erosion control measure in the central processing area were also not requested by USEPA's on-site representative. Minimal rainfall during the course of the project negated the need for construction of erosion control features.

Air monitoring was conducted in accordance with Section 22.0 of the Health and Safety Plan included in the Revised Work Plan. Typically, down wind concentrations were no higher than up wind (or background) results. In the isolated cases where down wind readings were higher than up wind (or background), readings were still less than an order of magnitude higher. At no time during site activities did the work generate enough dust to require an upgrade of respiratory protection to air purifying respirators. All operations were conducted without the need to provide worker respiratory protection. Section 3.2 further discusses the results of air monitoring activities.

Although not called out in the Revised Work Plan, numerous large boulders were encountered during excavation at some of the range berms. These boulders were not

loaded for transportation to the central processing area. Rather, these boulders were either stacked on the range or pushed over the back of the range berm. These boulders were sprayed with liquid MAECTITE as was specified for oversize materials separated from the soils (on the 6-inch shredder screen) in the central processing area. Photographs of this activity are included in Appendix C.

2.9 In-Situ Processing

After completion of excavation to remove recoverable bullet fragments, confirmed at each range by USEPA's on-site representative, in-situ MAECTITE processing was implemented as necessary. In-situ processing was necessary only if the range specific processing plan (see Section 2.5) indicated that sections of the berm or area within 10 feet in front of the toe of the berm still contained TCLP leachable lead in excess of 5.0 mg/L or post-excavation soil sample analytical results indicated the presence of TCLP leachable lead in excess of 5.0 mg/L.

In-situ processing was completed at Ranges G, H, I, J, K, N, O, P, A, B, C and D based upon the pre-excavation and/or post-excavation sample data and range specific processing plans. In-situ processing was not required at Ranges KD, SE, SW, or E based upon pre-excavation and post-excavation sample data meeting the established project performance criteria.

In-situ processing consisted of applying liquid MAECTITE reagents to the soil in the toe (if this was the section requiring in-situ processing) or pulling down a section of the berm to be addressed into the area in front of the berm and applying liquid MAECTITE reagents. The reagents and the soil were then blended using a track excavator. Photographs of the in-situ process are included in Appendix C.

The pulling down of the section of the berm to be addressed represents a change from the proposed method of applying MAECTITE directly to the berm. Based upon the assumed effective depth of 9 inches on a sloped surface versus 18 to 24 inches on level areas, USEPA's on-site representative agreed that pulling down the material into the area in front of the berm would be more efficient and meet the intent of the work plan requirements.

At range berms with multiple depth intervals at a given section that required in-situ processing, processed soils were laid aside and then the additional depth interval soils were pulled down into the area in front of the berm.

The highest daily production rate achieved for in-situ processing was 511 cubic yards. Typical daily production was in the 100 to 200 cubic yards per day range. A total of 5,323 cubic yards of on-range soils were processed via the in-situ methods. In-situ processing was started on March 19, 1998 at Range G and completed on June 8, 1998 at Range A. The in-situ processing activities were completed five (5) weeks ahead of the project schedule despite incurring 15 days of weather related delays and three (3) days of UXO

clearance support delays. Table 2-5 presents a range by range summary of the quantity of on-range soils processed utilizing the in-situ methodology.

The maximum penetration into a berm to process soils containing TCLP leachable lead was 18 feet at Range K. Other ranges that required in-situ processing to depths greater than originally anticipated included B (12 feet), H (14 feet) and I (12 feet). Note that these "depths" are not below ground surface but are approximately perpendicular to the original face of the berms.

Upon completion of blending, an in-situ process confirmation sample was collected in accordance with the Sampling and Analysis Project Plan (included as Section 3.0 of the Work Plan). Specifically, a random grab sample was collected to represent an approximately 50 ton quantity of processed soil. These grab samples (a maximum of 10) were composited and analyzed for TCLP leachable lead as confirmation of the in-situ processing. For ranges with less than 250 tons of material processed, a minimum of five (5) grab samples were collected and composited for analysis. The composite samples were analyzed in the on-site mobile laboratory for TCLP leachable lead to confirm that the in-situ processing had successfully reduced TCLP leachable lead to less than 5.0 mg/L. A total of 29 post-processing soil samples were collected to confirm that the in-situ MAECTITE process had successfully reduced TCLP leachable lead to less than 5.0 mg/L.

In fact, the in-situ process not only met but exceeded the project performance criteria:

⇒ 100 % less than 0.6 mg/L TCLP leachable lead.
⇒ 97 % less than 0.5 mg/L TCLP leachable lead.

Air monitoring was conducted in accordance with Section 22.0 of the Health and Safety Plan included in the Revised Work Plan. Typically, down wind concentrations were no higher than up wind (or background) results. In the isolated cases where down wind readings were higher than up wind (or background), readings were still less than an order of magnitude higher. At no time during site activities did the work generate enough dust to require an upgrade of respiratory protection to air purifying respirators. All operations were conducted without the need to provide worker respiratory protection. Section 3.2 further discusses the results of air monitoring activities.

Erosion control measures were constructed at Range H, at the direction of USEPA's on-site representative, prior to initiating excavation activities. The erosion control measures were left in-place during in-situ processing activities.

Table 2-5
Summary of In-Situ Processing Quantities

Range	Quantity of Soil Processed (cubic yards)
A	57
B	1974
C	334
D	113
E - Berm E - Pop-ups	-- --
G	313
H	546
I	962
J	206
K	263
KD	--
N	93
O	408
P	111
SE Pop-ups	--
SW Pop-ups	--
Total Quantity Processed	**5,380 cubic yards**

Decontamination of personnel at the ranges was accomplished in accordance with the project health and safety plan (included in the Revised Work Plan) within the established contamination reduction zones. Equipment was decontaminated via dry methods (i.e., shovel and broom) to remove gross accumulation of soils from the exterior of equipment prior to transportation to the next range. USEPA's on-site representative accepted this method as adequate.

2.10 Berm Reconstruction

Upon review of the post-excavation soil sample and in-situ processing verification sample analytical results, Ogden directed Sevenson to commence reconstruction of the berms at Ranges B and C. Reconstruction was accomplished utilizing ex-situ processed soils stockpiled in the central processing area that had been analyzed to confirm that TCLP leachable lead had been reduced to less than 5.0 mg/L. Photographs of the berm reconstruction activity are included in Appendix C.

The berms on Ranges B and C were reconstructed to the original contours based upon pre-excavation surveys conducted by Cape Surv. Cape Surv confirmed the reconstruction via post-reconstruction surveys. Reconstruction of the berms at Ranges B and C was completed eight (8) weeks ahead of the project schedule despite having incurred 15 days of weather related delays and three (3) days of UXO clearance support delays earlier in the project.

The MAARNG is responsible for reconstruction of the other small arms range berms. Reconstruction is already underway utilizing the ex-situ processed soil.

2.11 Equipment Decontamination

Prior to demobilization from the site, Sevenson's equipment was decontaminated. Decontamination was accomplished with a mixture of methods including dry cleaning (shovels, brooms), compressed air, and high pressure water washing. Prior to being removed from the site, each piece of equipment was inspected by the Site Safety Officer and a certificate of decontamination completed including the name and model number of the equipment, date of decontamination, and a discussion of the procedures utilized. The certificates of decontamination were attached to the daily production reports.

Equipment decontamination was completed on June 24, 1998, approximately four (4) weeks ahead of schedule.

2.12 Demobilization and Site Restoration

Upon completion of the field activities, field equipment and personnel were demobilized from the project site. During demobilization, the approximately 35,000 square foot area where the ex-situ processing equipment and pre-processing soil stockpile was formerly located was sprayed with MAECTITE.

The last office trailer was demobilized on June 26, 1998. The final piece of equipment was demobilized on or about July 2, 1998. Final demobilization was completed five (5) weeks ahead of the project schedule despite having incurred 18 days of delays. Photographs of the central processing and support area after completion of demobilization activities are included in Appendix C.

Orange construction fencing erected during the mobilization portion of the project was left in-place near the material stockpiles. The disposition of the stockpiles left on-site after completion of demobilization activities is noted below.

Ex-Situ Processed Soil

Processed soil was left in the post-processing stockpile for use by the MAARNG in reconstruction of the small arms ranges.

Material Retained on the No. 4 Screen

The material retained on the No. 4 screen for recycling (estimated 1,200 cubic yards mixture of gravel, bullets, bullet fragments, and bullet jacketing) will be managed by the MAARNG. Efforts are reportedly underway to contract for the secondary separation of the material retained on the No. 4 screen. Ultimately, the intent is to ship the bullets, fragments and jacketing off-site for recycling and return the stone to beneficial use on-site.

Oversize Rocks

The remaining oversize rocks (estimated 750 cubic yards) will be managed by MAARNG in conjunction with the management of the material retained on the No. 4 screen. The intent is to return the oversize rocks to beneficial use on-site.

3.0 ANALYTICAL DATA PRESENTATION

3.1 Chemical Analyses

Analytical data was generated by Sevenson's on-site mobile laboratory and Waste Stream Technologies, Inc. in Buffalo, New York. Soil samples were collected and analyzed for the following general purposes:

- Pre-excavation berm characterization
- Post-excavation confirmation
- Post ex-situ MAECTITE processing confirmation
- Post in-situ MAECTITE processing confirmation

The following data summary tables present TCLP leachable lead, total lead and other total metals (copper, iron, nickel, and antimony) for pre- and post-excavation samples collected from the small arms range berms (Tables 3-1 through 3-30); TCLP leachable lead and total lead for the ex-situ process confirmation samples (Table 3-31); and TCLP leachable lead and total lead for the in-situ process confirmation samples (Table 3-32). The complete laboratory data reports are contained in Appendix D (Volume II).

The data illustrates the limited extent of TCLP leachable lead in the berm and near berm soils based upon the pre-excavation sample collection and analysis activities conducted at MMR. Typically, the highest TCLP leachable lead concentrations were detected within the first two (2) feet of soil on the berm face. In limited cases (i.e., Range H), higher concentrations of TCLP leachable lead were observed with depth at the initial post-excavation sample locations (mid-point between pre-excavation sample locations). These higher concentrations with depth may be attributed to past resurfacing of the berms. Vertical migration of TCLP leachable lead (in concentrations greater than 5.0 mg/L) from the berms was typically limited to less than 10 feet measured perpendicular to the face of the berm.

The reported detection of other total metals (copper, iron, nickel, and antimony) in the berm soils was not surprising given the chemical composition of small arms rounds jacketing (the part of the bullet surrounding the lead core). The Administrative Order directing this project required removal of metallic lead and chemical fixation of leachable lead as the governing performance criteria. The collection of data on other total metals was performed to satisfy USEPA's requirement added as a condition of approval of the project Work Plan.

The point to take away is that in the 16 bermed small arms ranges addressed during this project, the soils containing TCLP leachable lead concentrations greater than 5.0 mg/L were removed during the excavation and/or in-situ process activities. This is supported by the post-excavation and post in-situ processing confirmation analytical data that indicates the soils remaining at the berms contains less than 5.0 mg/L of TCLP leachable lead.

The soils excavated and run through the ex-situ process (screening and chemical fixation) due to the presence of recoverable metallic lead were to be processed to the point of containing less than 5.0 mg/L of TCLP leachable lead. The process met and in the vast majority of the post ex-situ process confirmation samples exceed the performance criteria by an order of magnitude. The success of the ex-situ process is demonstrated by the TCLP leachable lead concentrations in the post ex-situ process confirmation analytical data. The majority of the analytical results indicated that TCLP leachable lead had been reduced to less than 0.5 mg/L.

Guide to Understanding Sample Identification

To aid the reader in understanding the sample identification scheme implemented for the project, the following guide is provided. Figure 3-1 depicts a typical small arms range layout in profile.

Pre-Excavation Samples

Range : Berm or Toe (Primary or Secondary) : Location : Depth

Example: A:B1:L75:02
A = Range A
B1 = Primary Berm (versus Secondary Berm indicated as B2)
L75 = 75 feet left of center
02 = 0 to 2 feet depth interval from face of berm

Example: A:T2:R75:46
A = Range A
T2 = Secondary Toe (versus Primary Toe indicated as T1)
R75 = 75 feet right of center
46 = 4 to 6 feet depth interval from ground surface in toe area

Post-Excavation Samples - Bermed Ranges

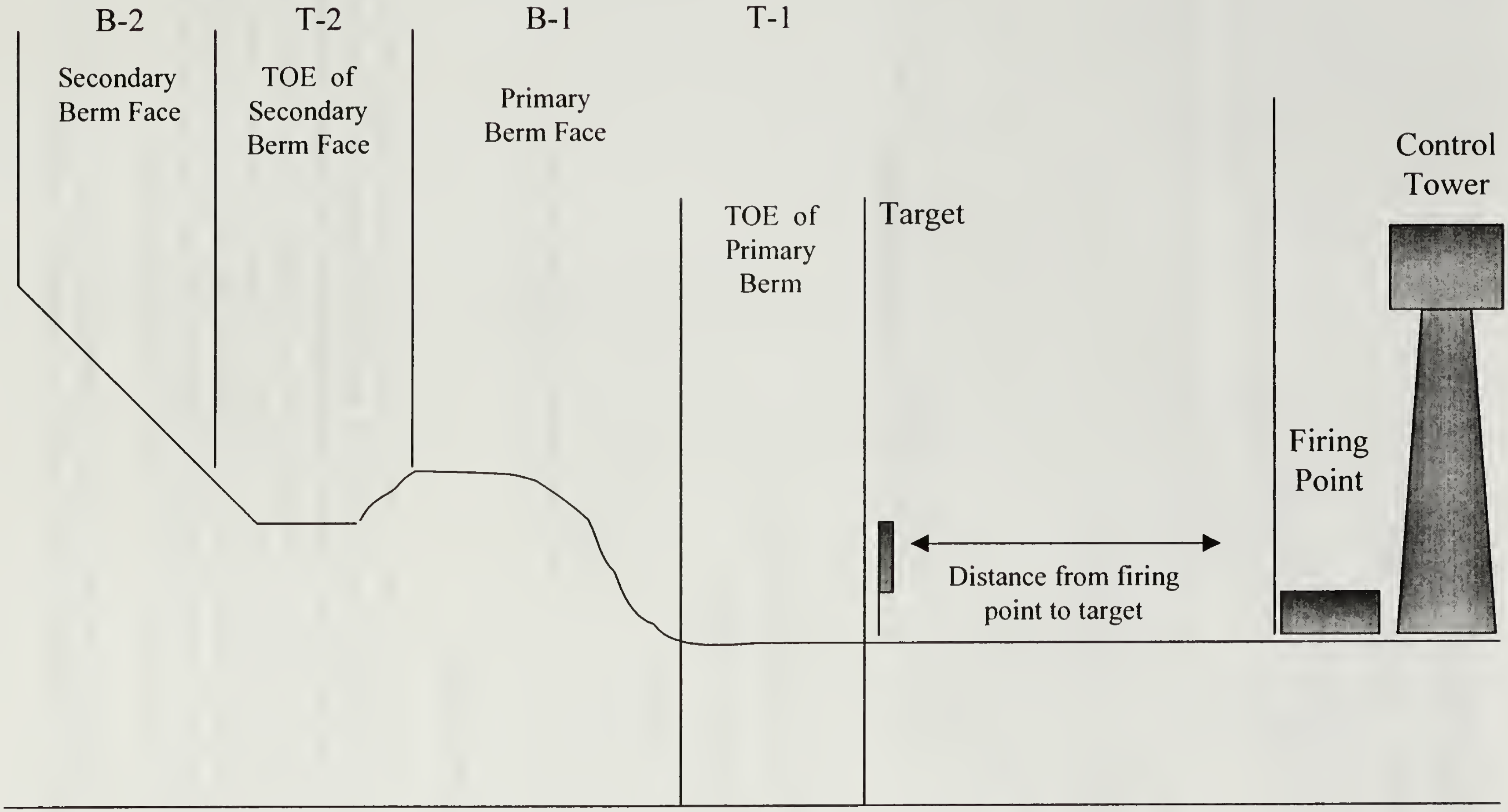
Range : Berm or Toe (Primary or Secondary) : Location / Location : Depth

Example: A:B1:L75/L50:24
A = Range A
B1 = Primary Berm
L75/L50 = Mid-point between 75 and 50 feet left of center
24 = 2 to 4 feet depth interval from face of berm

Figure 3-1

Typical Small Arms Range Layout

TYPICAL SMALL ARMS RANGE LAYOUT



Post-Excavation Samples - Pop-up Target Ranges SE and SW

Range : Distance : Position : Depth

Example: SE:125M:B:24
SE = Range SE
125M = 125 meter target line (from firing positions)
B = Position B
24 = 2 to 4 feet depth interval from face of pop-up protector

Ex-Situ Process Confirmation Samples

Treated Stockpile : Number

Example: TSP-07
TSP = Treated Stockpile
07 = Seventh 500 ton “lot” of processed soil

In-Situ Process Confirmation Samples

Treated Soil : Range : Number

Example: TS-A-01
TS = Treated Soil
A = Range A
01 = First confirmation sample from Range A

3.2 Air Monitoring

A portion of the air monitoring samples collected by the site safety officer during performance of the project were analyzed at an off-site laboratory as a quantification of the lead contained in the dust collected on the sample media. The samples sent off-site for analysis were shipped to Philip Analytical Services in Reading, Pennsylvania for analysis by either NIOSH Method No. 7105 or ID 121. The intent of having a portion of the collected air samples analyzed of-site was to determine the quantity of total lead in the air sample collected and to provide data for comparison of the on-site air monitoring samples (i.e., determine the percentage of lead in the dust collected in a sample).

The off-site laboratory analytical results are presented in Table 3-33. The on-site air monitoring data and off-site analytical reports are contained in Appendix B.

As briefly discussed in Sections 2.6, 2.8 and 2.9, down wind airborne particulate concentrations were typically no higher than up wind (or background) results. In the isolated cases where down wind results were higher than up wind (or background), the results were still less than an order of magnitude higher than background. The project Health and Safety Plan specified upgrading of worker respiratory protection if respirable dust exceeded a concentration of 500 micrograms per cubic meter (also expressed as 0.5 mg/m3) or if lead in airborne dust exceeded 50 micrograms per cubic meter (also expressed as 0.05 mg/m3).

Reviewing the summary of air monitoring sample analytical results (Table 3-33) analyzed for total lead the reader can see that at no time did the air borne concentrations of total lead approach the point (greater than 0.05 mg/m3) of requiring worker protection in the area of active handling of the soils. Further, the on-site air monitoring results included in Appendix B indicate that the total air borne dust concentrations also did not approach the point (greater than 0.5 mg/m3) of requiring worker protection in the areas of active handling of the soils. At no time during site activities did the work generate enough dust to require an upgrade of respiratory protection to air purifying respirators. All operations were conducted without the need to provide worker respiratory protection.

Table 3-1

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range A - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
A:B1:L75:02	< 0.50	< 50.0	3.5	1940	1.4	< 1.0
A:B1:L75:24	2.130	224.9				
A:B1:L75:46	< 0.50	< 50.0				
A:B1:L50:02	3.738	95.6				
A:B1:L50:24	1.594	69.8				
A:B1:L50:46	< 0.50	< 50.0				
A:B1:L25:02	14.727	199.0				
A:B1:L25:24	22.097	457.5				
A:B1:L25:46	12.181	56.8				
A:B1:L25:68	< 0.50	< 50.0				
A:B1:CP:02	70.09	380.0				
A:B1:CP:24	8.027	302.4				
A:B1:CP:46	84.29	302.4				
A:B1:CP:68	2.087	68.9				
A:B1:R25:02	29.34	767.8				
A:B1:R25:24	6.016	199.0				
A:B1:R25:46	0.924	< 50.0	22.3	1220	< 1.0	< 1.0
A:B1:R50:02	< 0.50	< 50.0				
A:B1:R50:24	< 0.50	< 50.0				
A:B1:R50:46	< 0.50	54.3				
A:B1:R75:02	< 0.50	< 50.0				
A:B1:R75:24	< 0.50	< 50.0				
A:B1:R75:46	< 0.50	< 50.0				

Table 3-1 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range A - Toe of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
A:T1:L75:02	< 0.50	< 50.0				
A:T1:L75:24	< 0.50	< 50.0	1.1	4420	1.9	< 1.0
A:T1:L75:46	< 0.50	< 50.0				
A:T1:L50:02	< 0.50	< 50.0				
A:T1:L50:24	< 0.50	< 50.0				
A:T1:L50:46	< 0.50	< 50.0				
A:T1:L25:02	0.545	< 50.0				
A:T1:L25:24	< 0.50	< 50.0				
A:T1:L25:46	< 0.50	< 50.0				
A:T1:CP:02	2.894	229.3	107	2590	1.2	< 1.0
A:T1:CP:24	< 0.50	< 50.0				
A:T1:CP:46	< 0.50	< 50.0				
A:T1:R25:02	2.223	136.0				
A:T1:R25:24	< 0.50	< 50.0				
A:T1:R25:46	< 0.50	< 50.0				
A:T1:R50:02	< 0.50	89.3				
A:T1:R50:24	< 0.50	< 50.0				
A:T1:R50:46	< 0.50	< 50.0				
A:T1:R75:02	1.552	< 50.0				
A:T1:R75:24	< 0.50	< 50.0				
A:T1:R75:46	< 0.50	< 50.0				

Table 3-1 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range A - Face of Secondary Berm

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
A:B2:L75:02	< 0.50	< 50.0				
A:B2:L75:24	< 0.50	< 50.0				
A:B2:L75:46	< 0.50	< 50.0				
A:B2:L50:02	< 0.50	< 50.0				
A:B2:L50:24	< 0.50	< 50.0	1.7	7750	3.2	< 1.0
A:B2:L50:46	< 0.50	< 50.0				
A:B2:L25:02	< 0.50	< 50.0				
A:B2:L25:24	< 0.50	< 50.0				
A:B2:L25:46	1.695	< 50.0				
A:B2:CP:02	< 0.50	< 50.0				
A:B2:CP:24	0.937	203.6				
A:B2:CP:46	< 0.50	< 50.0				
A:B2:R25:02	< 0.50	< 50.0	7.8	5100	2	< 1.0
A:B2:R25:24	< 0.50	< 50.0				
A:B2:R25:46	< 0.50	< 50.0				
A:B2:R50:02	< 0.50	< 50.0				
A:B2:R50:24	< 0.50	< 50.0				
A:B2:R50:46	< 0.50	< 50.0				
A:B2:R75:02	< 0.50	< 50.0				
A:B2:R75:24	< 0.50	< 50.0				
A:B2:R75:46	< 0.50	< 50.0				

Table 3-1 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range A - Toe of Secondary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
A:T2:L75:02	0.782	< 0.50				
A:T2:L75:24	< 0.50	< 0.50				
A:T2:L75:46	< 0.50	< 0.50				
A:T2:L50:02	5.190	< 0.50				
A:T2:L50:24	< 0.50	< 0.50				
A:T2:L50:46	< 0.50	< 0.50	2.7	5330	3.1	< 1.0
A:T2:L25:02	< 0.50	< 0.50				
A:T2:L25:24	< 0.50	< 0.50				
A:T2:L25:46	< 0.50	< 0.50				
A:T2:CP:02	10.841	2119				
A:T2:CP:24	0.522	< 0.50				
A:T2:CP:46	0.522	56.8				
A:T2:R25:02	1.862	< 0.50				
A:T2:R25:24	< 0.50	< 0.50	< 1.0	2490	1.4	< 1.0
A:T2:R25:46	< 0.50	< 0.50				
A:T2:R50:02	< 0.50	< 0.50				
A:T2:R50:24	< 0.50	< 0.50				
A:T2:R50:46	< 0.50	< 0.50				
A:T2:R75:02	5.748	< 50.0				
A:T2:R75:24	< 0.50	< 50.0				
A:T2:R75:46	< 0.50	< 0.50				

Table 3-2

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range A - Face of Primary Berm

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
A:B1:L75:02	< 0.50	< 50.0				
A:B1:L75/L50:24	< 0.50	< 50.0				
A:B1:L75/L50:46	1.730	134.9				
A:B1:L75/L50:68	< 0.50	< 50.0				
A:B1:L75/L50:810	< 0.50	< 50.0				
A:B1:L75/L50:1012	0.570	< 50.0				
A:B1:L50/L25:24	< 0.50	< 50.0				
A:B1:L50/L25:68	< 0.50	< 50.0				
A:B1:L50/L25:1012	< 0.50	< 50.0				
A:B1:L25/CP:68	< 0.50	56.3				
A:B1:L25/CP:1012	< 0.50	< 50.0				
A:B1:CP/R25:68	< 0.50	< 50.0				
A:B1:CP/R25:1012	0.570	< 50.0				
A:B1:R25/R50:24	< 0.50	< 50.0				
A:B1:R25/R50:46	1.859	168.6				
A:B1:R25/R50:68	0.954	90.0				
A:B1:R25/R50:1012	1.194	82.0				
A:B1:R50/R75:24	< 0.50	67.6				
A:B1:R50/R75:1012	< 0.50	< 50.0				
A:B1:R75/R100:24	< 0.50	< 50.0				
A:B1:R75/R100:1012	< 0.50	< 50.0				
A:B1:R100:24	< 0.50	< 50.0				

Table 3-2 (Con't.)

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range A - Face of Secondary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
A:B2:L100:24	< 0.50	< 50.0				
A:B2:L75:24	< 0.50	< 50.0				
A:B2:L75/L50:24	< 0.50	< 50.0				
A:B2:L50/L25:24	< 0.50	< 50.0				
A:B2:L50/L25:46	< 0.50	82.0				
A:B2:L50/L25:68	< 0.50	94.5				
A:B2:L25/CP:24	< 0.50	< 50.0	6.57	4680	1.93	< 1.00
A:B2:L25/CP:46	< 0.50	< 50.0				
A:B2:L25/CP:68	< 0.50	< 50.0				
A:B2:CP/R25:24	< 0.50	< 50.0				
A:B2:CP/R25:46	0.695	94.5				
A:B2:R25/R50:24	2.488	< 50.0				
A:B2:R25/R50:46	< 0.50	< 50.0				
A:B2:R50/R75:24	< 0.50	< 50.0				
A:B2:R50/R75:46	< 0.50	< 50.0				
A:B2:R75:24	< 0.50	< 50.0	4.09	5050	2.17	< 1.00
A:B2:R75/R100:46	< 0.50	57.0	9.7	6070	3.3	< 1.0

Table 3-3

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range B - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
B:B1:L300:02	< 0.50	< 50.0				
B:B1:L300:24	< 0.50	< 50.0				
B:B1:L300:46	1.727	99.2				
B:B1:L275:02	< 0.50	< 50.0				
B:B1:L275:24	< 0.50	< 50.0	< 1.0	1120	< 1.0	< 1.0
B:B1:L275:46	< 0.50	< 50.0				
B:B1:L250:02	< 0.50	< 50.0				
B:B1:L250:24	< 0.50	< 50.0				
B:B1:L250:46	< 0.50	< 50.0				
B:B1:L225:02	2.767	< 50.0				
B:B1:L225:24	< 0.50	< 50.0				
B:B1:L225:46	< 0.50	< 50.0				
B:B1:L200:02	< 0.50	< 50.0	1.9	1090	< 1.0	< 1.0
B:B1:L200:24	17.853	162.8				
B:B1:L200:46	< 0.50	< 50.0				
B:B1:L175:02	< 0.50	< 50.0				
B:B1:L175:24	237.7	1295.7				
B:B1:L175:46	< 0.50	< 50.0				
B:B1:L150:02	< 0.50	< 50.0				
B:B1:L150:24	22.47	< 50.0				
B:B1:L150:46	0.816	< 50.0				
B:B1:L125:02	12.352	57.1				
B:B1:L125:24	10.952	68.9				
B:B1:L125:46	3.020	57.1				
B:B1:L100:02	< 0.50	< 50.0				
B:B1:L100:24	< 0.50	80.7				
B:B1:L100:46	< 0.50	< 50.0	1.6	3150	1.6	< 1.0
B:B1:L75:02	11.574	221.9				
B:B1:L75:24	81.53	975.2				
B:B1:L75:46	5.197	245.4				
B:B1:L75:68	< 0.50	< 50.0	2.54	2847	1.25	2.13
B:B1:L50:02	0.843	116.0				
B:B1:L50:24	4.109	< 50.0				
B:B1:L50:46	15.307	163.1				
B:B1:L50:68	< 0.50	< 50.0				
B:B1:L25:02	Note 1					
B:B1:L25:24	Note 1					
B:B1:L25:46	Note 1					

Table 3-3 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range B - Face of Primary Berm (Con't.)

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
B:B1:CP:02	107.97	1375.3				
B:B1:CP:24	3.642	68.9	7.6	1260	< 1.0	1.1
B:B1:CP:46	0.687	57.1				
B:B1:R25:02	Note 1					
B:B1:R25:24	Note 1					
B:B1:R25:46	Note 1					
B:B1:R50:02	7.997	< 50.0				
B:B1:R50:24	3.020	< 50.0				
B:B1:R50:46	20.439	1069.3				
B:B1:R50:68	0.774	< 50.0				
B:B1:R75:02	< 0.50	< 50.0				
B:B1:R75:24	14.685	104.2				
B:B1:R75:46	11.419	339.6				
B:B1:R75:68	36.81	1004.3				
B:B1:R75:810	17.310	59.2				
B:B1:R75:1012	< 0.50	< 50.0	< 1.00	1492	< 1.00	< 1.00
B:B1:R100:02	45.75	163.1	17.3	3160	2.8	< 1.0
B:B1:R100:24	6.131	104.2				
B:B1:R100:46	1.154	< 50.0				
B:B1:R125:02	9.708	116.0				
B:B1:R125:24	3.953	304.3				
B:B1:R125:46	3.331	< 50.0				
B:B1:R150:02	6.908	< 50.0				
B:B1:R150:24	8.308	92.4				
B:B1:R150:46	87.75	1869.7				
B:B1:R150:68	41.65	516.7				
B:B1:R150:810	4.687	164.5				
B:B1:R175:02	14.063	198.4				
B:B1:R175:24	< 0.50	< 50.0				
B:B1:R175:46	115.74	1316.5				
B:B1:R175:68	5.861	< 50.0	3.94	1917	< 1.00	2.38
B:B1:R175:810	< 0.50	< 50.0				
B:B1:R200:02	4.063	< 50.0				
B:B1:R200:24	< 0.50	< 50.0				
B:B1:R200:46	6.442	127.7	2.7	1460	< 1.0	< 1.0
B:B1:R200:68	< 0.50	< 50.0				
B:B1:R225:02	1.767	< 50.0				
B:B1:R225:24	< 0.50	< 50.0				
B:B1:R225:46	4.701	66.3				

Table 3-3 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range B - Face of Primary Berm (Con't.)

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
B:B1:R250:02	135.04	11,546				
B:B1:R250:24	1.129	66.3				
B:B1:R250:46	53.39	1521.9				
B:B1:R250:68	44.08	81.0				
B:B1:R250:810	0.769	< 50.0				
B:B1:R275:02	1.894	< 50.0				
B:B1:R275:24	6.615	66.3	2.5	1600	< 1.0	< 1.0
B:B1:R275:46	6.487	53.6				
B:B1:R275:68	6.467	60.3				
B:B1:R275:810	2.075	< 50.0				
B:B1:R300:02	8.656	1015.4				
B:B1:R300:24	14.142	926.8				
B:B1:R300:46	22.77	6990				
B:B1:R300:68	< 0.50	< 50.0				
B:B1:R325:02	< 0.50	< 50.0				
B:B1:R325:24	2.277	< 50.0				
B:B1:R325:46	< 0.50	< 50.0				

Note 1: See Sevenson's letter dated April 27, 1998. Data reported in this table for sample identification assigned in the field. Actual location not reflected by sample identification number. Sevenson's letter provides cross reference of identified location to actual location.

Table 3-3 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range B - Toe of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
B:T1:L300:02	0.746	< 50.0	3.2	2158	1.2	< 1.0
B:T1:L300:24	< 0.50	< 50.0				
B:T1:L300:46	< 0.50	< 50.0				
B:T1:L275:02	< 0.50	< 50.0				
B:T1:L275:24	< 0.50	< 50.0				
B:T1:L275:46	< 0.50	< 50.0				
B:T1:L250:02	1.129	154.9				
B:T1:L250:24	< 0.50	< 50.0				
B:T1:L250:46	< 0.50	< 50.0				
B:T1:L225:02	12.240	895.5				
B:T1:L225:24	1.251	< 50.0				
B:T1:L225:46	< 0.50	< 50.0				
B:T1:L200:02	24.43	819.5				
B:T1:L200:24	1.251	< 50.0				
B:T1:L200:46	< 0.50	< 50.0	1.4	3150	1.4	< 1.0
B:T1:L175:02	35.02	1947.0				
B:T1:L175:24	1.251	< 50.0				
B:T1:L175:46	< 0.50	< 50.0				
B:T1:L150:02	1.119	< 50.0				
B:T1:L150:24	28.40	502.8				
B:T1:L150:46	0.854	< 50.0				
B:T1:L125:02	156.82	3127				
B:T1:L125:24	167.41	2874	54.4	2120	< 1.0	1.9
B:T1:L125:46	53.55	300.1				
B:T1:L125:68	38.02	734.6				
B:T1:L125:810	45.78	1669.8				
B:T1:L125:1012	5.199	54.7				
B:T1:L125:1214	< 0.50	< 50.0				
B:T1:L100:02	2.575	135.4				
B:T1:L100:24	0.854	< 50.0				
B:T1:L100:46	< 0.50	< 50.0				
B:T1:L75:02	21.78	439.4				
B:T1:L75:24	20.45	718.1				
B:T1:L75:46	9.459	< 50.0				
B:T1:L75:68	18.217	205.5				
B:T1:L75:810	< 0.50	< 50.0				
B:T1:L50:02	36.34	553.4	53.8	1930	< 1.0	3.2
B:T1:L50:24	48.28	1617.6				
B:T1:L50:46	1.516	< 50.0				

Table 3-3 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range B - Toe of Primary Berm (Con't.)

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
B:T1:L25:02	Note 1					
B:T1:L25:24	Note 1					
B:T1:L25:46	Note 1					
B:T1:CP:02	82.68	1921.6				
B:T1:CP:24	35.02	490.1				
B:T1:CP:46	11.048	933.5				
B:T1:CP:68	70.73	4648				
B:T1:CP:810	4.687	90.8				
B:T1:R25:02	654.7	10,222				
B:T1:R25:24	297.2	5,028				
B:T1:R25:46	33.69	794.1				
B:T1:R25:68	35.60	350.7				
B:T1:R25:810	6.102	69.7				
B:T1:R25:1012	3.731	< 50.0				
B:T1:R50:02	734.1	8321				
B:T1:R50:24	33.69	794.1				
B:T1:R50:46	39.00	629.5				
B:T1:R50:68	57.40	1087.3				
B:T1:R50:810	0.66	< 50.0				
B:T1:R75:02	61.5	1830.0				
B:T1:R75:24	< 0.50	< 50.0				
B:T1:R75:46	< 0.50	< 50.0	< 1.0	1470	< 1.0	< 1.0
B:T1:R100:02	< 0.50	< 50.0				
B:T1:R100:24	< 0.50	< 50.0				
B:T1:R100:46	< 0.50	< 50.0				
B:T1:R125:02	27.5	1181.3				
B:T1:R125:24	1.465	< 50.0				
B:T1:R125:46	< 0.50	< 50.0				
B:T1:R150:02	20.164	808.3	4.7	1610	1.1	< 1.0
B:T1:R150:24	0.615	< 50.0				
B:T1:R150:46	< 0.50	< 50.0				
B:T1:R175:02	26.55	1489.4				
B:T1:R175:24	2.825	< 50.0				
B:T1:R175:46	< 0.50	< 50.0				
B:T1:R200:02	3.675	127.3				
B:T1:R200:24	< 0.50	< 50.0				
B:T1:R200:46	< 0.50	< 50.0				

Table 3-3 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range B - Toe of Primary Berm (Con't.)

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
B:T1:R225:02	27.5	2732	38.6	5010	3	< 1.0
B:T1:R225:24	< 0.50	< 50.0				
B:T1:R225:46	< 0.50	< 50.0				
B:T1:R250:02	1.125	< 50.0				
B:T1:R250:24	< 0.50	< 50.0				
B:T1:R250:46	< 0.50	< 50.0				
B:T1:R275:02	< 0.50	< 50.0				
B:T1:R275:24	4.185	< 50.0				
B:T1:R275:46	< 0.50	< 50.0				
B:T1:R300:02	1.975	< 50.0				
B:T1:R300:24	< 0.50	< 50.0				
B:T1:R300:46	< 0.50	< 50.0				

Note 1: See Sevenson's letter dated April 27, 1998. Data reported in this table for sample identification assigned in the field. Actual location not reflected by sample identification number. Sevenson's letter provides cross reference of identified location to actual location.

Table 3-4

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range B - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
B:B1:L300:24	< 0.50	< 50.0	< 1.0	1550	< 1.0	< 1.0
B:B1:L300/L275:24	0.535	< 50.0				
B:B1:L275/L250:24	< 0.50	< 50.0				
B:B1:L250/L225:24	< 0.50	< 50.0				
B:B1:L225/L200:24	< 0.50	< 50.0				
B:B1:L225/L200:46	< 0.50	< 50.0				
B:B1:L200/L175:46	< 0.50	< 50.0				
B:B1:L175/L150:46	< 0.50	< 50.0				
B:B1:L150/L125:46	< 0.50	< 50.0				
B:B1:L125/L100:24	< 0.50	< 50.0				
B:B1:L125/L100:46	< 0.50	< 50.0				
B:B1:L100/L75:24	1.408	< 50.0				
B:B1:L100/L75:46	< 0.50	< 50.0				
B:B1:L100/L75:68	< 0.50	< 50.0				
B:B1:L75/50:68	< 0.50	< 50.0				
B:B1:L50/L25:46	< 0.50	< 50.0				
B:B1:L50/L25:68	< 0.50	< 50.0				
B:B1:L25/R25:46	9.131	< 50.0				
B:B1:L25/R25:810	< 0.50	< 50.0				
B:B1:R25/R50:68	2.826	< 50.0				
B:B1:R25/R50:810	< 0.50	< 50.0				
B:B1:R25/R50:1012	< 0.50	< 50.0				
B:B1:R50/R75:46	< 0.50	< 50.0				
B:B1:R50/R75:68	< 0.50	< 50.0				
B:B1:R50/R75:810	< 0.50	< 50.0				

Table 3-4 (Con't.)

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range B - Face of Primary Berm (Con't.)

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
B:B1:R50/R75:1012	< 0.50	< 50.0				
B:B1:R75/R100:24	8.320	130.6				
B:B1:R75/R100:46	1.355	< 50.0				
B:B1:R100/R125:24	< 0.50	< 50.0				
B:B1:R100/R125:46	< 0.50	< 50.0				
B:B1:R100/R125:68	< 0.50	< 50.0	1.2	2495	1.5	< 1.0
B:B1:R100/R125:810	< 0.50	< 50.0	1.2	3292	1.7	< 1.0
B:B1:R125/R150:810	< 0.50	< 50.0				
B:B1:R150/R175:68	1.460	< 50.0				
B:B1:R150/R175:810	< 0.50	< 50.0				
B:B1:R175/R200:24	< 0.50	< 50.0				
B:B1:R175/R200:46	< 0.50	< 50.0				
B:B1:R175/R200:68	< 0.50	< 50.0				
B:B1:R200/R225:24	1.509	< 50.0				
B:B1:R200/R225:46	< 0.50	< 50.0				
B:B1:R200/R225:68	< 0.50	< 50.0				
B:B1:R200/R225:810	< 0.50	< 50.0				
B:B1:R225/R250:810	< 0.50	< 50.0				
B:B1:R250/R275:68	< 0.50	< 50.0				
B:B1:R250/R275:810	< 0.50	< 50.0	1.3	4082	2.1	< 1.0
B:B1:R275/R300:24	< 0.50	< 50.0				
B:B1:R275/R300:46	< 0.50	< 50.0	1.4	4275	2.1	< 1.0
B:B1:R275/R300:68	< 0.50	< 50.0				
B:B1:R300:24	< 0.50	< 50.0	1.7	2250	1.7	< 1.0

Table 3-5

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range C - Face of Primary Berm

	TCLP Leachable Lead	**Total Lead**	**Total Copper**	**Total Iron**	**Total Nickel**	**Total Antimony**
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
C:B1:L150:02	< 0.50	< 50.0				
C:B1:L150:24	< 0.50	< 50.0				
C:B1:L150:46	< 0.50	< 50.0	2.7	1050	< 1.0	2.1
C:B1:L125:02	< 0.50	< 50.0				
C:B1:L125:24	< 0.50	< 50.0				
C:B1:L125:46	< 0.50	< 50.0				
C:B1:L100:02	< 0.50	< 50.0				
C:B1:L100:24	< 0.50	< 50.0				
C:B1:L100:46	< 0.50	< 50.0				
C:B1:L75:02	< 0.50	< 50.0	2.9	1160	< 1.0	2.3
C:B1:L75:24	< 0.50	< 50.0				
C:B1:L75:46	< 0.50	51.1				
C:B1:L50:02	0.645	< 50.0				
C:B1:L50:24	< 0.50	< 50.0				
C:B1:L50:46	< 0.50	< 50.0				
C:B1:L25:02	< 0.50	< 50.0				
C:B1:L25:24	0.952	< 50.0				
C:B1:L25:46	< 0.50	< 50.0	2.6	1580	< 1.0	2.3
C:B1:CP:02	< 0.50	< 50.0	3.6	1240	< 1.0	2.5
C:B1:CP:24	< 0.50	< 50.0				
C:B1:CP:46	8.717	< 50.0	3.7	1520	< 1.0	2.3
C:B1:CP:68	< 0.50	< 50.0				
C:B1:CP:810	< 0.50	< 50.0				
C:B1:R25:02	6.083	93.5				
C:B1:R25:24	< 0.50	< 50.0				
C:B1:R25:46	< 0.50	< 50.0				
C:B1:R50:02	7.694	50.0				
C:B1:R50:24	5.493	< 50.0				
C:B1:R50:46	< 0.50	< 50.0	3.0	1560	< 1.0	2.4
C:B1:R75:02	< 0.50	< 50.0				
C:B1:R75:24	< 0.50	< 50.0				
C:B1:R75:46	< 0.50	< 50.0				
C:B1:R100:02	67.10	1339.7				
C:B1:R100:24	< 0.50	117.3				
C:B1:R100:46	< 0.50	< 50.0				
C:B1:R125:02	< 0.50	< 50.0				
C:B1:R125:24	19.770	1141.2				
C:B1:R125:46	1.173	< 50.0				

Table 3-5 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range C - Face of Primary Berm (Con't.)

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
C:B1:R150:02	< 0.50	< 50.0				
C:B1:R150:24	1.282	< 50.0				
C:B1:R150:46	15.900	304.2				
C:B1:R150:68	< 0.50	< 50.0				
C:B1:R150:810	< 0.50	< 50.0				

Table 3-5 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range C - Toe of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
C:T1:L150:02	< 0.50	< 50.0				
C:T1:L150:24	< 0.50	< 50.0				
C:T1:L150:46	< 0.50	< 50.0				
C:T1:L125:02	91.33	141.3				
C:T1:L125:24	< 0.50	< 50.0				
C:T1:L125:46	< 0.50	< 50.0				
C:T1:L100:02	2.902	142.6				
C:T1:L100:24	< 0.50	< 50.0	3.4	990	< 1.0	2.8
C:T1:L100:46	< 0.50	< 50.0				
C:T1:L75:02	< 0.50	< 50.0				
C:T1:L75:24	< 0.50	< 50.0				
C:T1:L75:46	< 0.50	< 50.0				
C:T1:L50:02	< 0.50	< 50.0				
C:T1:L50:24	< 0.50	< 50.0				
C:T1:L50:46	< 0.50	< 50.0				
C:T1:L25:02	0.850	< 50.0				
C:T1:L25:24	< 0.50	< 50.0				
C:T1:L25:46	< 0.50	< 50.0				
C:T1:CP:02	< 0.50	< 50.0				
C:T1:CP:24	< 0.50	< 50.0				
C:T1:CP:46	< 0.50	< 50.0				
C:T1:R25:02	< 0.50	< 50.0				
C:T1:R25:24	0.757	< 50.0				
C:T1:R25:46	< 0.50	< 50.0				
C:T1:R50:02	< 0.50	< 50.0				
C:T1:R50:24	< 0.50	< 50.0	3.1	1430	< 1.0	2.2
C:T1:R50:46	< 0.50	< 50.0				
C:T1:R75:02	< 0.50	< 50.0				
C:T1:R75:24	< 0.50	< 50.0				
C:T1:R75:46	< 0.50	< 50.0				
C:T1:R100:02	< 0.50	< 50.0				
C:T1:R100:24	1.695	< 50.0				
C:T1:R100:46	< 0.50	< 50.0				
C:T1:R125:02	< 0.50	< 50.0				
C:T1:R125:24	< 0.50	< 50.0				
C:T1:R125:46	< 0.50	< 50.0				
C:T1:R150:02	< 0.50	< 50.0	3.0	1520	< 1.0	2.3
C:T1:R150:24	< 0.50	< 50.0				
C:T1:R150:46	< 0.50	< 50.0				

Table 3-5 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range C - Face of Secondary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
C:B2:L150:02	Note 1					
C:B2:L150:24	Note 1					
C:B2:L150:46	Note 1					
C:B2:L125:02	Note 1					
C:B2:L125:24	Note 1					
C:B2:L125:46	Note 1					
C:B2:L100:02	Note 1					
C:B2:L100:24	Note 1					
C:B2:L100:46	Note 1					
C:B2:L75:02	Note 1					
C:B2:L75:24	Note 1					
C:B2:L75:46	Note 1					
C:B2:L50:02	Note 1					
C:B2:L50:24	Note 1					
C:B2:L50:46	Note 1					
C:B2:L25:02	Note 1					
C:B2:L25:24	Note 1					
C:B2:L25:46	Note 1					
C:B2:CP:02	< 0.50	< 50.0				
C:B2:CP:24	< 0.50	< 50.0				
C:B2:CP:46	< 0.50	< 50.0				
C:B2:R25:02	< 0.50	< 50.0				
C:B2:R25:24	< 0.50	< 50.0				
C:B2:R25:46	< 0.50	< 50.0				
C:B2:R50:02	< 0.50	< 50.0				
C:B2:R50:24	< 0.50	< 50.0				
C:B2:R50:46	< 0.50	< 50.0				
C:B2:R75:02	< 0.50	< 50.0				
C:B2:R75:24	0.606	< 50.0				
C:B2:R75:46	< 0.50	< 50.0				
C:B2:R100:02	< 0.50	< 50.0	2.8	1380	< 1.0	2.2
C:B2:R100:24	< 0.50	< 50.0				
C:B2:R100:46	< 0.50	< 50.0				
C:B2:R125:02	< 0.50	< 50.0				
C:B2:R125:24	< 0.50	< 50.0				
C:B2:R125:46	< 0.50	< 50.0				
C:B2:R150:02	< 0.50	< 50.0				
C:B2:R150:24	< 0.50	< 50.0				
C:B2:R150:46	< 0.50	< 50.0				

Note 1: No "Left" portion existed for the Secondary Berm.

Table 3-5 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range C - Toe of Secondary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
C:T2:L150:02	Note 1					
C:T2:L150:24	Note 1					
C:T2:L150:46	Note 1					
C:T2:L125:02	Note 1					
C:T2:L125:24	Note 1					
C:T2:L125:46	Note 1					
C:T2:L100:02	Note 1					
C:T2:L100:24	Note 1					
C:T2:L100:46	Note 1					
C:T2:L75:02	Note 1					
C:T2:L75:24	Note 1					
C:T2:L75:46	Note 1					
C:T2:L50:02	Note 1					
C:T2:L50:24	Note 1					
C:T2:L50:46	Note 1					
C:T2:L25:02	Note 1					
C:T2:L25:24	Note 1					
C:T2:L25:46	Note 1					
C:T2:CP:02	< 0.50	< 50.0				
C:T2:CP:24	< 0.50	< 50.0				
C:T2:CP:46	< 0.50	< 50.0				
C:T2:R25:02	1.545	75.0				
C:T2:R25:24	< 0.50	< 50.0	4.1	1420	< 1.0	2.4
C:T2:R25:46	11.564	< 50.0	5.8	1850	< 1.0	2.4
C:T2:R25:68	< 0.50	< 50.0				
C:T2:R25:810	< 0.50	< 50.0				
C:T2:R50:02	< 0.50	< 50.0				
C:T2:R50:24	< 0.50	< 50.0				
C:T2:R50:46	< 0.50	< 50.0				
C:T2:R75:02	1.465	< 50.0				
C:T2:R75:24	< 0.50	< 50.0				
C:T2:R75:46	< 0.50	< 50.0				
C:T2:R100:02	1.390	< 50.0				
C:T2:R100:24	1.175	< 50.0				
C:T2:R100:46	< 0.50	< 50.0				
C:T2:R125:02	< 0.50	< 50.0				
C:T2:R125:24	< 0.50	< 50.0	3.0	1240	< 1.0	2.2
C:T2:R125:46	< 0.50	< 50.0				

Table 3-5 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range C - Toe of Secondary Berm (Con't.)

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
C:T2:R150:02	< 0.50	< 50.0				
C:T2:R150:24	< 0.50	< 50.0				
C:T2:R150:46	< 0.50	< 50.0	3.4	2250	0.9	2.0

Note 1: No "Left" portion existed for the Secondary Berm.

Table 3-6

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range C - Face of Primary Berm

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
C:B1:L150:24	< 0.50	< 50.0				
C:B1:L150/L125:24	< 0.50	< 50.0				
C:B1:L125/L100:24	< 0.50	< 50.0	< 1.00	1928	< 1.00	< 1.00
C:B1:L100/L75:24	< 0.50	< 50.0				
C:B1:L75/L50:24	2.475	160.0				
C:B1:L50/L25:24	< 0.50	< 50.0				
C:B1:L25/CP:24	< 0.50	< 50.0				
C:B1:L25/CP:46	< 0.50	< 50.0				
C:B1:L25/CP:68	< 0.50	< 50.0				
C:B1:CP:68	0.126	< 4.1	1.41	1660	< 1.00	< 1.00
C:B1:CP/R25:24	< 0.50	< 50.0				
C:B1:CP/R25:46	< 0.50	< 50.0				
C:B1:CP/R25:68	< 0.50	< 50.0				
C:B1:R25/R50:24	< 0.50	< 50.0				
C:B1:R25/R50:46	< 0.50	< 50.0				
C:B1:R50/R75:24	2.027	< 50.0				
C:B1:R50/R75:46	< 0.50	< 50.0				
C:B1:R75/R100:24	< 0.50	< 50.0				
C:B1:R100/R125:24	< 0.50	< 50.0				
C:B1:R100/R125:46	< 0.50	< 50.0				
C:B1:R125/R150:46	< 0.50	< 50.0				
C:B1:R125/R150:68	< 0.50	< 50.0				

Table 3-6 (Con't.)

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range C - Face of Secondary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
C:B2:CP:24	< 0.50	< 50.0				
C:B2:CP/R25:24	< 0.50	< 50.0				
C:B2:R25/R50:24	< 0.50	< 50.0				
C:B2:R50/R75:24	< 0.50	< 50.0	< 1.00	3799	1.05	< 1.00
C:B2:R75/R100:24	< 0.50	< 50.0				
C:B2:R100/R125:24	< 0.50	< 50.0				
C:B2:R125/R150:24	< 0.50	< 50.0				
C:B2:R150:24	< 0.50	< 50.0				

Table 3-7

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range D - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
D:B1:L50:02	250.30	2510				
D:B1:L50:24	0.713	51.5				
D:B1:L50:46	< 0.50	< 50.0				
D:B1:L25:02	111.98	4754				
D:B1:L25:24	5.316	< 50.0				
D:B1:L25:46	< 0.50	< 50.0				
D:B1:R25:02	186.4	5003	191.0	3320	1.5	6.3
D:B1:R25:24	1.864	< 50.0				
D:B1:R25:46	< 0.50	201.1	< 1.0	1350	< 1.0	< 1.0
D:B1:R50:02	250.3	3258				
D:B1:R50:24	3.143	51.5				
D:B1:R50:46	< 0.50	< 50.0				

Range D - Toe of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
D:T1:L50:02	7.392	88.9				
D:T1:L50:24	0.585	< 50.0				
D:T1:L50:46	< 0.50	< 50.0				
D:T1:L25:02	8.796	176.2				
D:T1:L25:24	0.713	< 50.0				
D:T1:L25:46	< 0.50	< 50.0				
D:T1:R25:02	11.070	388.1				
D:T1:R25:24	< 0.50	< 50.0				
D:T1:R25:46	< 0.50	< 50.0				
D:T1:R50:02	9.400	735.6				
D:T1:R50:24	0.946	61				
D:T1:R50:46	< 0.50	< 50.0				

Table 3-8

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range D - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
D:B1:L50/L25:46	< 0.50	< 50.0				
D:B1:L25:24	< 0.50	< 50.0	1.87	2587	1.53	< 1.00
D:B1:L25/R25:24	1.387	< 50.0				
D:B1:L25/R25:46	< 0.50	< 50.0				
D:B1:R25:24	2.071	81.6				

Table 3-9

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range E - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
E:B1:L175:02H	Note 1					
E:B1:L175:02	< 0.50	104.8				
E:B1:L175:24H	Note 1					
E:B1:L175:24	< 0.50	< 50.0				
E:B1:L175:46H	Note 1					
E:B1:L175:46	< 0.50	< 50.0				
E:B1:L150:02H	Note 1					
E:B1:L150:02	< 0.50	< 50.0				
E:B1:L150:24H	Note 1					
E:B1:L150:24	< 0.50	< 50.0				
E:B1:L150:46H	Note 1					
E:B1:L150:46	< 0.50	< 50.0				
E:B1:L125:02H	Note 1					
E:B1:L125:02	0.66	69.7				
E:B1:L125:24H	Note 1					
E:B1:L125:24	< 0.50	< 50.0				
E:B1:L125:46H	Note 1					
E:B1:L125:46	< 0.50	< 50.0	< 1.0	1030	< 1.0	< 1.0
E:B1:L100:02H	< 0.50	< 50.0				
E:B1:L100:02	< 0.50	< 50.0				
E:B1:L100:24H	< 0.50	< 50.0				
E:B1:L100:24	< 0.50	< 50.0				
E:B1:L100:46H	< 0.50	< 50.0	< 1.0	1760	< 1.0	< 1.0
E:B1:L100:46	< 0.50	< 50.0				
E:B1:L75:02H	< 0.50	< 50.0				
E:B1:L75:02	0.66	< 50.0				
E:B1:L75:24H	< 0.50	< 50.0				
E:B1:L75:24	< 0.50	< 50.0				
E:B1:L75:46H	< 0.50	< 50.0				
E:B1:L75:46	< 0.50	< 50.0				
E:B1:L50:02H	< 0.50	< 50.0				
E:B1:L50:02	< 0.50	< 50.0				
E:B1:L50:24H	< 0.50	< 50.0				
E:B1:L50:24	< 0.50	< 50.0	< 1.0	1940	< 1.0	< 1.0
E:B1:L50:46H	< 0.50	< 50.0				
E:B1:L50:46	< 0.50	< 50.0				
E:B1:L25:02H	< 0.50	< 50.0				
E:B1:L25:02	< 0.50	< 50.0				
E:B1:L25:24H	< 0.50	< 50.0	1.4	2790	1.7	< 1.0
E:B1:L25:24	< 0.50	< 50.0				

Table 3-9 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range E - Face of Primary Berm (Con't.)

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
E:B1:L25:46H	< 0.50	< 50.0				
E:B1:L25:46	< 0.50	< 50.0				
E:B1:CP:02H	< 0.50	< 50.0				
E:B1:CP:02	6.210	290.8				
E:B1:CP:24H	< 0.50	< 50.0				
E:B1:CP:24	< 0.50	< 50.0				
E:B1:CP:46H	< 0.50	< 50.0				
E:B1:CP:46	< 0.50	< 50.0				
E:B1:R25:02H	< 0.50	< 50.0				
E:B1:R25:02	< 0.50	< 50.0	10.4	3150	1.7	< 1.0
E:B1:R25:24H	< 0.50	< 50.0				
E:B1:R25:24	< 0.50	< 50.0				
E:B1:R25:46H	< 0.50	< 50.0				
E:B1:R25:46	< 0.50	< 50.0				
E:B1:R50:02H	< 0.50	< 50.0	1.2	2920	1.1	< 1.0
E:B1:R50:02	0.552	< 50.0				
E:B1:R50:24H	< 0.50	< 50.0				
E:B1:R50:24	< 0.50	< 50.0				
E:B1:R50:46H	0.891	< 50.0				
E:B1:R50:46	< 0.50	< 50.0				
E:B1:R75:02H	Note 1					
E:B1:R75:02	< 0.50	< 50.0				
E:B1:R75:24H	Note 1					
E:B1:R75:24	< 0.50	< 50.0				
E:B1:R75:46H	Note 1					
E:B1:R75:46	< 0.50	< 50.0				
E:B1:R100:02H	< 0.50	< 50.0				
E:B1:R100:02	< 0.50	< 50.0				
E:B1:R100:24H	< 0.50	< 50.0				
E:B1:R100:24	< 0.50	< 50.0				
E:B1:R100:46H	< 0.50	< 50.0				
E:B1:R100:46	< 0.50	< 50.0				
E:B1:R125:02H	Note 1					
E:B1:R125:02	< 0.50	< 50.0				
E:B1:R125:24H	Note 1					
E:B1:R125:24	< 0.50	< 50.0				
E:B1:R125:46H	Note 1					
E:B1:R125:46	< 0.50	< 50.0	< 1.0	1190	< 1.0	< 1.0
E:B1:R150:02H	Note 1					
E:B1:R150:02	< 0.50	< 50.0				

Table 3-9 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range E - Face of Primary Berm (Con't.)

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
E:B1:R150:24H	Note 1					
E:B1:R150:24	< 0.50	< 50.0				
E:B1:R150:46H	Note 1					
E:B1:R150:46	< 0.50	< 50.0				
E:B1:R175:02H	Note 1					
E:B1:R175:02	< 0.50	< 50.0				
E:B1:R175:24H	Note 1					
E:B1:R175:24	< 0.50	< 50.0				
E:B1:R175:46H	Note 1					
E:B1:R175:46	< 0.50	< 50.0				

Note 1: No "High" Portion of berm.

Table 3-9 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range E - Toe of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
E:T1:L175:02	< 0.50	< 50.0				
E:T1:L175:24	< 0.50	< 50.0	2.9	3860	1.3	< 1.0
E:T1:L175:46	< 0.50	< 50.0				
E:T1:L150:02	< 0.50	< 50.0				
E:T1:L150:24	< 0.50	< 50.0				
E:T1:L150:46	< 0.50	< 50.0				
E:T1:L125:02	< 0.50	< 50.0				
E:T1:L125:24	< 0.50	< 50.0				
E:T1:L125:46	< 0.50	< 50.0				
E:T1:L100:02	< 0.50	< 50.0	2.6	1940	1.1	< 1.0
E:T1:L100:24	< 0.50	< 50.0				
E:T1:L100:46	< 0.50	< 50.0				
E:T1:L75:02	< 0.50	< 50.0				
E:T1:L75:24	< 0.50	< 50.0				
E:T1:L75:46	< 0.50	< 50.0				
E:T1:L50:02	< 0.50	< 50.0				
E:T1:L50:24	< 0.50	< 50.0				
E:T1:L50:46	< 0.50	< 50.0				
E:T1:L25:02	< 0.50	< 50.0				
E:T1:L25:24	< 0.50	< 50.0				
E:T1:L25:46	0.554	< 50.0				
E:T1:CP:02	< 0.50	< 50.0				
E:T1:CP:24	< 0.50	< 50.0				
E:T1:CP:46	< 0.50	< 50.0	< 1.0	802	< 1.0	< 1.0
E:T1:R25:02	< 0.50	< 50.0				
E:T1:R25:24	< 0.50	< 50.0				
E:T1:R25:46	< 0.50	< 50.0				
E:T1:R50:02	< 0.50	< 50.0				
E:T1:R50:24	< 0.50	< 50.0				
E:T1:R50:46	< 0.50	< 50.0				
E:T1:R75:02	< 0.50	< 50.0				
E:T1:R75:24	< 0.50	< 50.0	1.6	2230	< 1.0	< 1.0
E:T1:R75:46	< 0.50	< 50.0				
E:T1:R100:02	< 0.50	< 50.0				
E:T1:R100:24	< 0.50	< 50.0				
E:T1:R100:46	< 0.50	< 50.0				
E:T1:R125:02	< 0.50	< 50.0				
E:T1:R125:24	< 0.50	< 50.0				
E:T1:R125:46	< 0.50	< 50.0				

Table 3-9 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range E - Toe of Primary Berm (Con't.)

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
E:T1:R150:02	< 0.50	< 50.0	< 1.0	1340	< 1.0	< 1.0
E:T1:R150:24	< 0.50	< 50.0				
E:T1:R150:46	< 0.50	< 50.0				
E:T1:R175:02	< 0.50	< 50.0				
E:T1:R175:24	< 0.50	< 50.0				
E:T1:R175:46	< 0.50	< 50.0				

Table 3-10

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range E - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
E:B1:L175:24L	< 0.50	< 50.0				
E:B1:L175/L150:24L	< 0.50	< 50.0				
E:B1:L150/L125:24L	< 0.50	< 50.0				
E:B1:L125/L100:24L	< 0.50	< 50.0				
E:B1:L100:24H	< 0.50	< 50.0				
E:B1:L100/L75:24H	< 0.50	< 50.0				
E:B1:L100/L75:24L	< 0.50	< 50.0				
E:B1:L75/L50:24H	< 0.50	< 50.0				
E:B1:L75/L50:24L	< 0.50	< 50.0				
E:B1:L50/L25:24H	< 0.50	< 50.0	< 1.00	2204	< 1.00	< 1.00
E:B1:L50/L25:24L	< 0.50	< 50.0				
E:B1:L25/CP:24H	< 0.50	< 50.0				
E:B1:L25/CP:24L	< 0.50	< 50.0				
E:B1:CP/R25:24H	< 0.50	< 50.0				
E:B1:CP/R25:24L	< 0.50	< 50.0				
E:B1:R25/R50:24H	< 0.50	< 50.0				
E:B1:R25/R50:24L	< 0.50	< 50.0	3.59	5947	3.31	< 1.00
E:B1:R50:24H	< 0.50	< 50.0				
E:B1:R50/R75:24L	< 0.50	< 50.0				
E:B1:R75/R100:24H	< 0.50	< 50.0				
E:B1:R75/R100:24L	< 0.50	< 50.0				
E:B1:R100/R125:24H	< 0.50	< 50.0	9.34	13940	9.46	< 1.00
E:B1:R100/R125:24L	< 0.50	< 50.0				
E:B1:R125/R150:24L	< 0.50	< 50.0				

Table 3-10 (Con't.)

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range E - Face of Primary Berm (Con't.)

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
E:B1:R150/R175:24L	< 0.50	< 50.0				
E:B1:R175:24L	< 0.50	< 50.0				

Table 3-11

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range G - Face of Primary Berm

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
G:B1:L75:02	42.1	1240.0				
G:B1:L75:24	1.30	< 20.5				
G:B1:L75:46	0.056	< 20.5				
G:B1:L50:02	192	5460.0				
G:B1:L50:24	14.2	197.0				
G:B1:L50:46	0.170	< 20.5				
G:B1:L25:02	69.5	470.0				
G:B1:L25:24	2.00	31.6				
G:B1:L25:46	0.093	< 20.5				
G:B1:CP:02	277	4470.0				
G:B1:CP:24	62.4	195.0				
G:B1:CP:46	0.190	< 20.5				
G:B1:R25:02	525	7440.0				
G:B1:R25:24	262	3310.0				
G:B1:R25:46	4.20	207.0				
G:B1:R50:02	232	4780.0				
G:B1:R50:24	188	6960.0				
G:B1:R50:46	4.00	209.0				
G:B1:R75:02	108	2270.0				
G:B1:R75:24	80.0	1370.0				
G:B1:R75:46	0.260	59.5				

Table 3-11 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range G - Toe of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
G:T1:L75:02	109	1530.0				
G:T1:L75:24	0.560	< 20.5				
G:T1:L75:46	0.099	< 20.5				
G:T1:L50:02	264	5000.0				
G:T1:L50:24	2.90	114.0				
G:T1:L50:46	1.40	43.3				
G:T1:L25:02	1.80	68.5				
G:T1:L25:24	255	3150.0				
G:T1:L25:46	0.696	26.0	4.0	5170	1.7	< 1.0
G:T1:L25:68	4.90	144.0	9.3	3960	1.7	< 1.0
G:T1:CP:02	0.550	12200.0				
G:T1:CP:24	0.340	652.0				
G:T1:CP:46	0.390	< 20.5				
G:T1:R25:02	82.0	2890.0				
G:T1:R25:24	2.20	95.8				
G:T1:R25:46	0.180	< 20.5				
G:T1:R50:02	106	2860.0				
G:T1:R50:24	1.30	55.0				
G:T1:R50:46	0.077	< 20.5				
G:T1:R75:02	47.5	1660.0				
G:T1:R75:24	2.86	111.0				
G:T1:R75:46	0.023	< 20.5				

Table 3-12

Summary of Laboratory Analytical Data Post-Excavation Berm Soil Samples

Range G - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony	
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	
G:B1:L75/L50	4.819	< 50.0					(4-6 FT)
G:B1:L50/L25	< 0.50	< 50.0					(4-6 FT)
G:B1:L25/CP	8.291	330.2					(4-6 FT)
	In-Situ Processed						(4-6 FT)
G:B1:L25/CPB	< 0.50	< 50.0					(6-8 FT)
G:B1:CP/R25	< 0.50	112.0					(4-6 FT)
G:B1:R25/R50	89.34	2788					(4-6 FT)
	In-Situ Processed						(4-6 FT)
G:B1:R25/R50B	29.54	340.3					(6-8 FT)
	In-Situ Processed						(6-8 FT)
G:B1:R25/R50C	< 0.50	< 50.0					(8-10FT)
G:B1:R50/R75	0.575	150.5	9.1	5090	2.5	< 1.0	(4-6 FT)

Table 3-12 (Con't.)

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range G - Toe of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony	
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	
G:T1:L75/L50	11.635	330.2					(2-4 FT)
	In-Situ Processed						(2-4 FT)
G:T1:CP/R25	456.2	10106	1210	5310	1.7	13.7	(2-4 FT)
	In-Situ Processed						(2-4 FT)
G:T1:R25/R50	81.62	1331.5					(2-4 FT)
	In-Situ Processed						(2-4 FT)
G:B1:R50/R75	4.947	317.4					(2-4 FT)
	In-Situ Processed						(2-4 FT)

Table 3-13

Summary of Laboratory Analytical Data Pre-Excavation Berm Soil Samples

Range H - Face of Primary Berm

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
H:B1:L100:02	36.0	887	48.9	8080	3.3	< 1.0
H:B1:L100:24	0.480	28	5.2	12300	5.7	< 1.0
H:B1:L100:46	0.017	9.4	3.9	15500	6.9	< 1.0
H:B1:L75:02	20.7	444	14.5	2270	1.3	1.6
H:B1:L75:24	3.90	130	4.2	7920	3.9	< 1.0
H:B1:L75:46	0.027	7.3	3.3	5990	3.1	< 1.0
H:B1:L50:02	27.2	628	35.5	2990	1.6	1.4
H:B1:L50:24	9.50	310	9.4	7550	3.6	< 1.0
H:B1:L50:46	6.80	151	5.9	3890	3.2	< 1.0
H:B1:L50:68	< 0.50	< 50.0				
H:B1:L50:810	< 0.50	< 50.0				
H:B1:L25:02	64.3	3670	66.9	4550	2.4	10.5
H:B1:L25:24	75.6	1280	27.0	6410	3.5	2.4
H:B1:L25:46	6.90	514	15.3	6790	4.2	< 1.0
H:B1:L25:68	< 50.0	< 50.0				
H:B1:L25:810	< 0.50	< 50.0				
H:B1:CP:02	181	3670	80.5	5890	3.4	1.5
H:B1:CP:24	0.170	9.1	3.8	8310	4.4	< 1.0
H:B1:CP:46	11.8	191	10.6	4170	2.6	< 1.0
H:B1:CP:68	17.098	1338.8				
H:B1:CP:810	1.453	< 50.0				
H:B1:R25:02	102	3350	68.2	6230	4.0	3.6
H:B1:R25:24	0.044	15.1	4.2	11200	5.1	< 1.0
H:B1:R25:46	48.2	2150	115.0	7570	4.0	3.4
H:B1:R25:68	< 0.50	< 50.0				
H:B1:R25:810	< 0.50	< 50.0				
H:B1:R50:02	71.3	1230	28.8	2000	1.5	2.5
H:B1:R50:24	16.2	529	14.0	6600	3.5	< 1.0
H:B1:R50:46	33.4	936	23.6	8380	3.7	< 1.0
H:B1:R50:68	< 0.50	< 50.0	3.2	8830	3.6	< 1.0
H:B1:R50:810	< 0.50	< 50.0				
H:B1:R75:02	32.6	1100	53.1	5000	2.6	< 1.0
H:B1:R75:24	9.80	481	28.1	5080	2.9	< 1.0
H:B1:R75:46	0.031	13.4	3.6	9230	4.1	< 1.0
H:B1:R100:02	4.40	236	12.7	3910	< 5.0	< 5.0
H:B1:R100:24	2.40	141	20.2	3960	1.7	< 1.0
H:B1:R100:46	0.037	7.8	3.7	9580	5.5	< 1.0

Table 3-13 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range H - Toe of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
H:T1:L100:02	1.20	240	14.5	6650	2.7	< 1.0
H:T1:L100:24	0.080	26.1	5.4	10900	6.0	< 1.0
H:T1:L100:46	< 0.015	< 4.1	1.8	2030	2.0	< 1.0
H:T1:L75:02	2.50	258	14.1	9000	4.4	< 1.0
H:T1:L75:24	0.051	12.4	4.9	13200	7.4	< 1.0
H:T1:L75:46	0.015	15.3	12.7	10000	7.4	< 1.0
H:T1:L50:02	5.10	688	34.1	9380	5.9	< 1.0
H:T1:L50:24	< 0.015	9.3	2.5	13500	6.8	< 1.0
H:T1:L50:46	0.021	16.3	4.9	9750	3.5	< 1.0
H:T1:L25:02	0.740	210	10.1	10300	5.2	< 1.0
H:T1:L25:24	< 0.015	13.6	3.5	11600	5.5	< 1.0
H:T1:L25:46	< 0.015	11.7	4.0	11400	2.6	< 1.0
H:T1:CP:02	5.20	761	19.4	6470	2.7	< 1.0
H:T1:CP:24	0.050	9.1	2.7	7630	2.6	< 1.0
H:T1:CP:46	0.081	10.3	2.5	10700	2.7	< 1.0
H:T1:R25:02	3.00	86.7	4.8	4430	2.7	< 1.0
H:T1:R25:24	0.800	30.6	2.5	3120	2.2	< 1.0
H:T1:R25:46	0.067	< 4.1	1.6	1780	1.5	< 1.0
H:T1:R50:02	10.7	236	10.1	3530	2.2	< 1.0
H:T1:R50:24	0.044	4.8	2.5	2980	2.1	< 1.0
H:T1:R50:46	0.020	< 4.1	1.2	1070	< 1.0	< 1.0
H:T1:R75:02	1.50	197	10.0	7030	3.7	< 1.0
H:T1:R75:24	0.044	6.3	2.6	2550	2.0	< 1.0
H:T1:R75:46	0.016	< 4.1	4.9	2850	2.7	< 1.0
H:T1:R100:02	1.10	25.1	< 5.0	10500	6.2	< 5.0
H:T1:R100:24	0.101	< 20.5	< 5.0	2490	< 5.0	< 5.0
H:T1:R100:46	0.032	< 20.5	< 5.0	4270	< 5.0	< 5.0

Table 3-14

Summary of Laboratory Analytical Data Post-Excavation Berm Soil Samples

Range H - Face of Primary Berm

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)	
H:B1:L100/L75	29.12	2772					(2-4 FT)
H:B1:L100/L75B	8.060	301.3					(4-6 FT)
H:B1:L100/L75C	74.17	823.8					(6-8 FT)
H:B1:L100/L75D	3.37	390.0					(8-10 FT)
H:B1:L75/L50	45.17	3129					(2-4 FT)
H:B1:L75/L50B	91.32	2574					(4-6 FT)
H:B1:L75/L50C	< 0.50	< 50.0					(6-8 FT)
H:B1:L75/L50D	33.60	4063					(8-10 FT)
H:B1:L75/L50E	0.772	< 50.0					(10-12 FT)
H:B1:L50/L25	21.10	836.4					(10-12 FT)
H:B1:L50/L25B	46.50	164.0					(12-14 FT)
H:B1:L50/L25C	1.048	93.6					(14-16 FT)
H:B1:L25/CP	15.063	943.5					(10-12 FT)
	In-Situ Processed						(10-12 FT)
H:B1:CP/R25	48.61	2177					(8-10 FT)
H:B1:CP/R25B	25.91	827.9					(10-12 FT)
H:B1:CP/R25C	19.051	1438.2					(12-14 FT)
H:B1:CP/R25D	< 0.50	< 50.0					(14-16 FT)
H:B1:R25/R50	32.56	324.8					(6-8 FT)
H:B1:R25/R50:810	0.664	104.8					(8-10 FT)
H:B1:R50/R75	9.331	253.4					(6-8 FT)
H:B1:R50/R75:810	< 0.50	59.8					(8-10 FT)
H:B1:R75/R100	474.6	2891	1340	9030	5.2	26.7	(6-8 FT)
H:B1:R75/R100B	3.317	81.0					(8-10 FT)

Table 3-15

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range I - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
I:B1:L100:02	1.920	167.0				
I:B1:L100:24	3.419	266.9				
I:B1:L100:46	0.921	154.4				
I:B1:L75:02	215.4	9569				
I:B1:L75:24	6.274	393.9				
I:B1:L75:46	4.900	956.9				
I:B1:L50:02	325.3	2703	81.0	3650	2.6	2.6
I:B1:L50:24	11.080	984.4				
I:B1:L50:46	8.196	586.2				
I:B1:L50:68	5.666	622.3				
I:B1:L50:810	207	968				
I:B1:L50:1012	6.981	447.6				
I:B1:L50:1214	< 0.50	< 50.0				
I:B1:L25:02	164.2	2311				
I:B1:L25:24	23.11	231.1				
I:B1:L25:46	1.508	137.4				
I:B1:CP:02	43.6	3784				
I:B1:CP:24	2.311	1168.6				
I:B1:CP:46	13.695	190	20.5	4720	2.5	59.8
I:B1:CP:68	2.184	65.2				
I:B1:R25:02	175.0	3858				
I:B1:R25:24	12.572	652.8				
I:B1:R25:46	34.4	2312				
I:B1:R25:68	2.312	244.5				
I:B1:R50:02	76.6	2874				
I:B1:R50:24	10.886	329.6				
I:B1:R50:46	4.842	484.2				
I:B1:R75:02	16.177	689.4	183.0	3740	2.1	19.7
I:B1:R75:24	27.68	1381.9				
I:B1:R75:46	6.599	321.0				
I:B1:R75:68	< 0.50	< 50.0				
I:B1:R100:02	32.10	1440.9				
I:B1:R100:24	7.189	379.9				
I:B1:R100:46	1.884	144.2				

Table 3-15 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range I - Toe of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
I:T1:L100:02	3.665	311.5				
I:T1:L100:24	2.017	462.6	30.6	6210	2.3	< 1.0
I:T1:L100:46	< 0.50	64.6				
I:T1:L75:02	3.390	284.1				
I:T1:L75:24	2.841	297.8				
I:T1:L75:46	< 0.50	50.6				
I:T1:L50:02	20.43	432.0				
I:T1:L50:24	10.882	204.3				
I:T1:L50:46	< 0.50	< 50.0				
I:T1:L25:02	21.77	418.6				
I:T1:L25:24	43.6	1577.0				
I:T1:L25:46	< 0.50	< 50.0				
I:T1:CP:02	54.19	2671				
I:T1:CP:24	5.282	198.4				
I:T1:CP:46	< 0.50	< 50.0				
I:T1:R25:02	48.4	2733				
I:T1:R25:24	2.171	132.8	14.5	4150	2.8	< 1.0
I:T1:R25:46	< 0.50	< 50.0				
I:T1:R50:02	15.665	1931.9				
I:T1:R50:24	2.452	231.2				
I:T1:R50:46	< 0.50	< 50.0				
I:T1:R75:02	33.57	1293.5				
I:T1:R75:24	3.063	173.6				
I:T1:R75:46	< 0.50	< 50.0				
I:T1:R100:02	17.503	939.9				
I:T1:R100:24	18.682	409.4				
I:T1:R100:46	< 0.50	< 50.0				

Table 3-15 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range I - Face of Secondary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
I:B2:L100:02	1.358	236.6				
I:B2:L100:24	1.736	299.6				
I:B2:L100:46	3.500	135.8				
I:B2:L75:02	< 0.50	< 50.0				
I:B2:L75:24	< 0.50	< 50.0				
I:B2:L75:46	< 0.50	< 50.0				
I:B2:L50:02	3.776	138.0				
I:B2:L50:24	1.247	< 50.0				
I:B2:L50:46	< 0.50	71.4	17.6	5460	26.4	< 1.0
I:B2:L25:02	13.983	617.2				
I:B2:L25:24	4.708	151.3				
I:B2:L25:46	0.847	< 50.0				
I:B2:CP:02	46.91	399.4				
I:B2:CP:24	2.462	1179.4				
I:B2:CP:46	11.794	1304.7	175.0	6440	13.4	< 1.0
I:B2:CP:68	10.6	1010				
I:B2:CP:810	0.299	106				
I:B2:R25:02	18.479	301.9				
I:B2:R25:24	2.184	1165.4				
I:B2:R25:46	4.412	873.0				
I:B2:R50:02	0.728	173.6				
I:B2:R50:24	9.801	375.2				
I:B2:R50:46	6.146	513.8	4.5	4800	10.7	< 1.0
I:B2:R50:68	1.905	357.6				
I:B2:R75:02	< 0.50	501.2				
I:B2:R75:24	< 0.50	< 50.0				
I:B2:R75:46	< 0.50	< 50.0				
I:B2:R100:02	1.019	819.9				
I:B2:R100:24	0.634	114.7				
I:B2:R100:46	1.147	76.2				

Table 3-15 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range I - Toe of Secondary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
I:T2:L100:02	1.046	167.0				
I:T2:L100:24	1.920	304.4				
I:T2:L100:46	1.046	266.9				
I:T2:L75:02	6.292	241.9				
I:T2:L75:24	1.920	279.4				
I:T2:L75:46	3.169	291.9	36.3	4220	2.7	< 1.0
I:T2:L50:02	4.168	491.8				
I:T2:L50:24	4.668	616.7				
I:T2:L50:46	0.546	54.6				
I:T2:L25:02	17.816	512.2				
I:T2:L25:24	8.840	589.1				
I:T2:L25:46	< 0.50	< 50.0				
I:T2:CP:02	5.507	697.1				
I:T2:CP:24	18.420	1242.9				
I:T2:CP:46	23.6	1460				
I:T2:CP:68	4.86	1860				
I:T2:R25:02	7.045	896.8				
I:T2:R25:24	19.995	614.7				
I:T2:R25:46	< 0.50	< 50.0				
I:T2:R50:02	5.526	650.1				
I:T2:R50:24	2.184	204.4				
I:T2:R50:46	0.652	441.2	8.5	3720	2.8	< 1.0
I:T2:R75:02	1.380	284.4				
I:T2:R75:24	2.578	138.0				
I:T2:R75:46	No sample	No sample				
I:T2:R100:02	3.070	230.1				
I:T2:R100:24	< 0.50	204.4				
I:T2:R100:46	< 0.50	358.3	3.3	3210	78.0	< 1.0

Table 3-16

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range I - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
I:B1:L100/L75	7.485	162.3				
I:B1:L100/L75B	5.375	260.4				
I:B1:L100/L75C	< 0.50	< 50.0				
I:B1:L75/L50	< 0.50	135.9				

Range I - Face of Secondary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
I:B2:L75/L50	< 0.50	< 50.0				
I:B2:L50/L25	< 0.50	< 50.0				
I:B2:L25/CP	12.823	< 50.0				
I:B2:L25/CPB	< 0.50	< 50.0				
I:B2:CP/R25	1.219	< 50.0				
I:B2:R25/R50	< 0.50	< 50.0				
I:B2:R50/R75	< 0.50	< 50.0				
I:B2:R75/R100	< 0.50	< 50.0				

Table 3-17

Summary of Laboratory Analytical Data Pre-Excavation Berm Soil Samples

Range J - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
J:B1:L75:02H	35.0	190.0				
J:B1:L75:02L	74.1	575	148.0	7510	3.8	3.5
J:B1:L75:24H	0.818	18.1				
J:B1:L75:24L	0.078	7.2				
J:B1:L75:46H	0.682	13.7				
J:B1:L75:46L	0.019	6.3				
J:B1:L50:02H	9.88	173.0				
J:B1:L50:02L	251.0	3570				
J:B1:L50:24H	1.35	54.7				
J:B1:L50:24L	0.055	10.9	2.6	11000	5.7	< 0.9
J:B1:L50:46H	1.13	18.0				
J:B1:L50:46L	0.026	6.7				
J:B1:L25:02H	23.900	2460	61.9	3760	12.0	9.6
J:B1:L25:02L	136.0	10.5				
J:B1:L25:24H	0.134	33.4				
J:B1:L25:24L	15.5	493				
J:B1:L25:46H	1.54	43.7				
J:B1:L25:46L	0.090	5.5				
J:B1:R25:02H	8.07	232				
J:B1:R25:02L	187.0	5090				
J:B1:R25:24H	0.383	14.9				
J:B1:R25:24L	1.33	243	14.1	11540	5.4	< 0.9
J:B1:R25:46H	0.095	17.2				
J:B1:R25:46L	0.397	18.3				
J:B1:R50:02H	7.59	94.4				
J:B1:R50:02L	53.1	435				
J:B1:R50:24H	0.058	10.3				
J:B1:R50:24L	0.072	34.5				
J:B1:R50:46H	10.0	376.0				
J:B1:R50:46L	0.017	15.3				
J:B1:R50:68H	0.045	11.1				
J:B1:R50:810H	< 0.015	6.8				
J:B1:R75:02H	3.44	116				
J:B1L:R75:02	6.10	2360				
J:B1:R75:24H	0.210	15.3				
J:B1L:R75:24	0.171	109				
J:B1:R75:46H	0.027	15.6				
J:B1L:R75:46	0.027	6.0				

Table 3-17 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range J - Toe of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
J:T1:L75:02	2.38	87				
J:T1:L75:24	0.182	< 4.1				
J:T1:L75:46	0.037	< 4.1				
J:T1:L50:02	6.90	464				
J:T1:L50:24	1.23	25.8				
J:T1:L50:46	0.076	12.3				
J:T1:L25:02	14.60	482				
J:T1:L25:24	0.743	23.7				
J:T1:L25:46	0.038	< 4.1	2.6	1680	1.5	< 0.9
J:T1:R25:02	22.2	287				
J:T1:R25:24	0.838	45.4				
J:T1:R25:46	0.350	17.1				
J:T1:R50:02	3.59	76.5				
J:T1:R50:24	1.47	28.6				
J:T1:R50:46	0.076	< 4.1				
J:T1:R75:02	0.756	30.6				
J:T1:R75:24	0.179	< 4.1				
J:T1:R75:46	< 0.015	< 4.1				

Table 3-18

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range J - Face of Primary Berm

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
J:B1:L75/L50:46H	8.844	260.4				
J:B1:L75/L50:68H	< 0.50	< 50.0				
J:B1:L75/L50:46L	< 0.50	< 50.0				
J:B1:L50/L25:46H	< 0.50	< 50.0	4.45	7698	4.67	< 1.0
J:B1:L50/L25:46L	< 0.50	< 50.0				
J:B1:L25/R25:46H	< 0.50	< 50.0				
J:B1:L25/R25:46L	< 0.50	< 50.0				
J:B1:R25/R50:46H	< 0.50	< 50.0				
J:B1:R25/R50:46L	0.562	< 50.0				
J:B1:R50/R75:24H	< 0.50	92.1				
J:B1:R50/R75:24L	13.321	1708.2				
J:B1:R50/R75:46L	1.009	< 50.0				
J:B1:R50/R75:46L	< 0.50	< 50.0				

Table 3-19

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range K - Face of Primary Berm

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
K:B1:L100:02	2.200	76.3				
K:B1:L100:24	0.492	52.9				
K:B1:L100:46	0.020	8.0				
K:B1:L75:02	16.600	140.0				
K:B1:L75:24	16.600	287.0				
K:B1:L75:46	0.040	9.6				
K:B1:L50:02	120.000	4450.0				
K:B1:L50:24	315.000	2700.0				
K:B1:L50:46	5.600	76.0				
K:B1:L50:68	<0.50	< 50.0				
K:B1:L50:810	< 0.50	74.4				
K:B1:L25:02	72.400	553.0				
K:B1:L25:24	0.105	12.4				
K:B1:L25:46	0.016	7.7				
K:B1:CP:02	240.000	1390.0				
K:B1:CP:24	0.019	22.0				
K:B1:CP:46	0.032	7.8	1.8	7080	1.9	< 1.0
K:B1:R25:02	25.400	150.0	29.9	10500	6.2	< 1.0
K:B1:R25:24	0.083	8.7				
K:B1:R25:46	0.130	44.0				
K:B1:R50:02	0.621	173.0				
K:B1:R50:24	0.038	34.1				
K:B1:R50:46	< 0.015	9.4				
K:B1:R75:02	0.472	62.2				
K:B1:R75:24	< 0.015	4.4				
K:B1:R75:46	< 0.015	5.0				
K:B1:R100:02	< 0.015	10.4				
K:B1:R100:24	0.022	7.7	1.6	8910	2.2	< 1.0
K:B1:R100:46	< 0.015	8.9				

Table 3-19 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range K - Toe of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
K:T1:L100:02	14.400	396.0				
K:T1:L100:24	0.038	5.3				
K:T1:L100:46	< 0.015	< 4.1				
K:T1:L75:02	23.800	751.0				
K:T1:L75:24	0.341	25.0				
K:T1:L75:46	< 0.015	< 4.1				
K:T1:L50:02	43.000	1370.0				
K:T1:L50:24	0.173	13.7	3.4	8300	2.2	< 1.0
K:T1:L50:46	< 0.015	< 4.1				
K:T1:L25:02	28.600	860.0				
K:T1:L25:24	0.582	18.2				
K:T1:L25:46	< 0.015	4.3				
K:T1:CP:02	48.000	1010.0				
K:T1:CP:24	0.271	12.4				
K:T1:CP:46	< 0.015	< 4.1				
K:T1:R25:02	24.000	965.0	69.5	7500	3.2	< 1.0
K:T1:R25:24	2.400	70.9				
K:T1:R25:46	0.016	< 4.1				
K:T1:R50:02	78.400	1920.0				
K:T1:R50:24	2.800	133.0				
K:T1:R50:46	0.025	< 4.1				
K:T1:R75:02	25.100	1170.0				
K:T1:R75:24	0.792	61.4				
K:T1:R75:46	0.017	5.7				
K:T1:R100:02	17.100	623.0				
K:T1:R100:24	1.400	68.0				
K:T1:R100:46	< 0.015	< 4.1				

Table 3-20

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range K - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
K:B1:L100/L106+	< 0.50	< 50.0	5.3	8058	3.95	2.43
K:B1:L100/L75	< 0.50	< 50.0				
K:B1:L75/L50	5.594	243.4				
K:B1:L75/L50:1416	63.93	1588.8	224	10620	6.39	< 1.0
K:B1:L75/L50:1618	< 0.50	626.4				
K:B1:L50/L25	4.839	420.6				
K:B1:L25/CP	< 0.50	< 50.0				
K:B1:CP/R25	< 0.50	< 50.0				
K:B1:R25/R50	< 0.50	< 50.0				
K:B1:R50/R75	< 0.50	< 50.0				
K:B1:R75/R100	< 0.50	< 50.0				

Table 3-21

Summary of Laboratory Analytical Data Pre-Excavation Berm Soil Samples

Range KD - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
KD:B1:L75:02	0.404	25.6				
KD:B1:L75:24	0.050	7.0				
KD:B1:L75:46	0.639	15.9	2.8	5230	21.1	< 1.0
KD:B1:L50:02	0.093	48.8				
KD:B1:L50:24	0.033	9.6				
KD:B1:L50:46	< 0.015	< 4.1				
KD:B1:L25:02	0.058	38.5				
KD:B1:L25:24	0.037	5.3				
KD:B1:L25:46	0.047	< 4.1				
KD:B1:CP:02	0.195	105.0				
KD:B1:CP:24	0.186	9.5				
KD:B1:CP:46	3.100	55.9				
KD:B1:R25:02	0.219	41.8				
KD:B1:R25:24	5.700 **	7.6				
KD:B1:R25:46	2.200	32.6				
KD:B1:R50:02	0.187	55.3				
KD:B1:R50:24	0.33	12.5	2.8	8820	6.5	< 1.0
KD:B1:R50:46	0.045	10.9				
KD:B1:R75:02	1.300	130.0				
KD:B1:R75:24	1.700	55.6				
KD:B1:R75:46	0.147	16.3				

Note : ** QA/QC review resulted in voiding this data point as an outlier statistically.

Table 3-21 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range KD - Toe of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
KD:T1:L75:02	0.063	< 4.1				
KD:T1:L75:24	0.024	< 4.1				
KD:T1:L75:46	< 0.015	< 4.1				
KD:T1:L50:02	0.018	11.2	6.7	8320	6.0	< 1.0
KD:T1:L50:24	< 0.015	< 4.1				
KD:T1:L50:46	< 0.015	< 4.1				
KD:T1:L25:02	< 0.015	5.0				
KD:T1:L25:24	< 0.015	< 4.1				
KD:T1:L25:46	< 0.015	< 4.1				
KD:T1:R25:02	0.026	18.7				
KD:T1:R25:24	< 0.015	5.2				
KD:T1:R25:46	< 0.015	< 4.1				
KD:T1:R50:02	0.023	9.5				
KD:T1:R50:24	< 0.015	< 4.1				
KD:T1:R50:46	< 0.015	< 4.1				
KD:T1:R75:02	0.029	14.7				
KD:T1:R75:24	< 0.015	< 4.1				
KD:T1:R75:46	< 0.015	< 4.1	2.0	2800	1.6	< 1.0

Table 3-22

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range KD - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
KD:B1:L75/L50	< 0.50	< 50.0				
KD:B1:L50/L25	< 0.50	< 50.0				
KD:B1:L25/CP	< 0.50	< 50.0				
KD:B1:CP/R25	< 0.50	< 50.0				
KD:B1R25/R50	< 0.50	< 50.0				
KD:B1:R50/R75	< 0.50	< 50.0	2.62	6090	2.91	< 1.00

Table 3-23

Summary of Laboratory Analytical Data Pre-Excavation Berm Soil Samples

Range N - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
N:B1:L200:02	< 0.50	< 50.0				
N:B1:L200:24	< 0.50	< 50.0	5.0	7130	3.7	< 1.0
N:B1:L200:46	< 0.50	< 50.0				
N:B1:L175:02	21.17	2763				
N:B1:L175:24	< 0.50	< 50.0				
N:B1:L175:46	< 0.50	56.5				
N:B1:L150:02	1.729	276.3				
N:B1:L150:24	< 0.50	< 50.0				
N:B1:L150:46	< 0.50	< 50.0				
N:B1:L125:02	23.07	165.9				
N:B1:L125:24	1.141	62.3				
N:B1:L125:46	< 0.50	< 50.0				
N:B1:L100:02	28.25	256.6				
N:B1:L100:24	0.623	< 50.0				
N:B1:L100:46	< 0.50	< 50.0				
N:B1:L75:02	30.84	1668.0				
N:B1:L75:24	6.968	1240.7				
N:B1:L75:46	< 0.50	< 50.0				
N:B1:L50:02	4.637	62.3	3.8	3240	1.9	< 1.0
N:B1:L50:24	< 0.50	75.3				
N:B1:L50:46	< 0.50	< 50.0				
N:B1:L25:02	43.78	852.2				
N:B1:L25:24	< 0.50	< 50.0				
N:B1:L25:46	2.566	114.1				
N:B1:R25:02	1.170	86.5				
N:B1:R25:24	< 0.50	86.5				
N:B1:R25:46	< 0.50	< 50.0				
N:B1:R50:02	< 0.50	< 50.0				
N:B1:R50:24	< 0.50	< 50.0	3.0	3230	1.9	< 1.0
N:B1:R50:46	< 0.50	< 50.0				
N:B1:R75:02	1.041	73.6				
N:B1:R75:24	< 0.50	< 50.0				
N:B1:R75:46	< 0.50	< 50.0				
N:B1:R100:02	< 0.50	< 50.0				
N:B1:R100:24	7.349	394.5				
N:B1:R100:46	< 0.50	< 50.0				
N:B1:R125:02	< 0.50	60.8				
N:B1:R125:24	< 0.50	< 50.0				
N:B1:R125:46	< 0.50	< 50.0	2.7	8900	4.9	< 1.0

Table 3-23 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range N - Face of Primary Berm (Con't.)

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
N:B1:R150:02	< 0.50	< 50.0				
N:B1:R150:24	< 0.50	< 50.0				
N:B1:R150:46	< 0.50	< 50.0				
N:B1:R175:02	< 0.50	< 50.0				
N:B1:R175:24	< 0.50	< 50.0				
N:B1:R175:46	< 0.50	< 50.0				
N:B1:R200:02	< 0.50	61.4				
N:B1:R200:24	< 0.50	< 50.0				
N:B1:R200:46	< 0.50	< 50.0	1.9	1910	7.5	< 1.0

Table 3-23 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range N - Toe of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
N:T1:L200:02	< 0.50	< 50.0				
N:T1:L200:24	< 0.50	< 50.0				
N:T1:L200:46	< 0.50	< 50.0				
N:T1:L175:02	1.186	191.6				
N:T1:L175:24	< 0.50	< 50.0				
N:T1:L175:46	< 0.50	< 50.0				
N:T1:L150:02	1.939	204.6	5.4	3990	2.5	< 1.0
N:T1:L150:24	< 0.50	< 50.0				
N:T1:L150:46	< 0.50	< 50.0				
N:T1:L125:02	< 0.50	< 50.0				
N:T1:L125:24	< 0.50	< 50.0				
N:T1:L125:46	< 0.50	< 50.0				
N:T1:L100:02	5.455	778.1				
N:T1:L100:24	< 0.50	< 50.0				
N:T1:L100:46	< 0.50	< 50.0				
N:T1:L75:02	1.971	147.0				
N:T1:L75:24	< 0.50	71.9				
N:T1:L75:46	< 0.50	71.9				
N:T1:L50:02	3.975	309.8				
N:T1:L50:24	< 0.50	< 50.0				
N:T1:L50:46	< 0.50	< 50.0	2.8	2990	2.1	< 1.0
N:T1:L25:02	1.593	297.3				
N:T1:L25:24	< 0.50	< 50.0				
N:T1:L25:46	< 0.50	< 50.0				
N:T1:R25:02	4.100	147				
N:T1:R25:24	< 0.50	< 50.0				
N:T1:R25:46	< 0.50	< 50.0				
N:T1:R50:02	2.721	131.4				
N:T1:R50:24	0.969	84.4	2.0	1940	1.3	< 1.0
N:T1:R50:46	< 0.50	< 50.0				
N:T1:R75:02	< 0.50	61.0				
N:T1:R75:24	1.197	96.2				
N:T1:R75:46	< 0.50	< 50.0				
N:T1:R100:02	< 0.50	< 50.0				
N:T1:R100:24	< 0.50	< 50.0				
N:T1:R100:46	< 0.50	< 50.0				
N:T1:R125:02	< 0.50	51.4	3.2	4990	2.6	< 1.0
N:T1:R125:24	< 0.50	< 50.0				
N:T1:R125:46	< 0.50	< 50.0				

Table 3-23 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range N - Toe of Primary Berm (Con't.)

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
N:T1:R150:02	< 0.50	< 50.0				
N:T1:R150:24	< 0.50	< 50.0				
N:T1:R150:46	< 0.50	< 50.0				
N:T1:R175:02	< 0.50	< 50.0				
N:T1:R175:24	< 0.50	< 50.0				
N:T1:R175:46	< 0.50	< 50.0				
N:T1:R200:02	< 0.50	< 50.0				
N:T1:R200:24	< 0.50	< 50.0				
N:T1:R200:46	< 0.50	< 50.0				

Table 3-24

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range N - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
N:B1:L200/L175	< 0.50	< 50.0				
N:B1:L175/L150	< 0.50	< 50.0				
N:B1:L150/L125	< 0.50	< 50.0				
N:B1:L125/L100	< 0.50	< 50.0				
N:B1:L100/L75:24	< 0.50	< 50.0	3.41	2540	2.1	< 1.00
N:B1:L75/L50:24	< 0.50	< 50.0				
N:B1:L50/L25	< 0.50	< 50.0				
N:B1:L25/R25	< 0.50	< 50.0				
N:B1:R25/R50	< 0.50	< 50.0	3.25	2695	1.13	2.43
N:B1:R50/R75	< 0.50	< 50.0				
N:B1:R75/R100:24	< 0.50	< 50.0				
N:B1:R100/R125:24	< 0.50	< 50.0				
N:B1:R125/R150	< 0.50	< 50.0				
N:B1:R150/R175	< 0.50	< 50.0				
N:B1:R175/R200	< 0.50	< 50.0				

Table 3-25

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range O - Face of Primary Berm

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
O:B1:L50:02	12.50	250.0				
O:B1:L50:24	0.050	< 4.1				
O:B1:L50:46	93.30	8.4				
O:B1:L50:68	< 0.50	< 50.0				
O:B1:L25:02	11.90	745.0				
O:B1:L25:24	0.396	12.0	1.6	2310	1.4	< 1.0
O:B1:L25:46	0.056	< 4.1				
O:B1:R25:02	126.0	93.3				
O:B1:R25:24	1.63	260.0				
O:B1:R25:46	0.353	6.7				
O:B1:R50:02	8.75	285.0				
O:B1:R50:24	0.295	17.3				
O:B1:R50:46	0.016	< 4.1				

Range O - Toe of Primary Berm

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
O:T1:L50:02	1.56	6.0				
O:T1:L50:24	< 0.015	< 4.1				
O:T1:L50:46	0.015	79.7				
O:T1:L25:02	0.774	68.2				
O:T1:L25:24	< 0.015	< 4.1				
O:T1:L25:46	0.096	< 4.1				
O:T1:R25:02	3.500	1570.0	26.1	9020	7.2	< 1.0
O:T1:R25:24	0.135	8.7				
O:T1:R25:46	< 0.015	< 4.1				
O:T1:R50:02	1.27	29.1				
O:T1:R50:24	0.018	< 4.1				
O:T1:R50:46	< 0.015	< 4.1				

Table 3-25 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range O - Face of Secondary Berm

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
O:B2:L50:02	0.052	< 4.1				
O:B2:L50:24	0.511	16.7				
O:B2:L50:46	0.084	< 4.1				
O:B2:L25:02	0.028	< 4.1	3.0	2270	2.4	< 1.0
O:B2:L25:24	1.14	14.2				
O:B2:L25:46	0.169	23.1				
O:B2:R25:02	0.644	42.3				
O:B2:R25:24	21.20	12.2				
O:B2:R25:46	20.80	258.0				
O:B2:R25:68	32.87	2392				
O:B2:R25:810	0.713	64.0				
O:B2:R50:02	5.10	76.5				
O:B2:R50:24	11.800	975.0	44.6	6060	4.4	< 1.0
O:B2:R50:46	22.10	70.8				
O:B2:R50:68	8.619	137.4	6.89	2781	2.66	< 1.00
O:B2:R50:810	< 0.50	< 50.0				

Range O - Toe of Secondary Berm

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
O:T2:L50:02	32.60	247.0				
O:T2:L50:24	6.68	54.4				
O:T2:L50:46	4.30	126.0				
O:T2:L25:02	0.932	11.2				
O:T2:L25:24	0.023	< 4.1				
O:T2:L25:46	0.017	< 4.1				
O:T2:R25:02	10.70	621.0				
O:T2:R25:24	0.151	4.8				
O:T2:R25:46	4.300	493.0	12.0	3500	3.2	< 1.0
O:T2:R50:02	16.40	1160.0				
O:T2:R50:24	6.73	902.0				
O:T2:R50:46	4.39	337.0				

Table 3-26

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range O - Face of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
O:B1:L75/L50:46	< 0.50	< 50.0				
O:B1:L75/L50:68	< 0.50	< 50.0	1.45	1382	< 1.00	< 1.00
O:B1:L50/L25	0.559	4.92	3.29	3022	1.31	2.12
O:B1:L50/L25:46	< 0.50	< 50.0				
O:B1:L50/L25:68	< 0.50	< 50.0				
O:B1:L25/R25	< 0.50	< 50.0				
O:B1:R25/R50	< 0.50	< 50.0				

Range O - Face of Secondary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
O:B2:L50/L25	< 0.50	< 50.0				
O:B2:L25/R25:46	< 0.50	< 50.0				
O:B2:L25/R25:68	< 0.50	< 50.0				
O:B2:L25/R25:810	< 0.50	< 50.0				
O:B2:R25/R50:810	< 0.50	< 50.0				

Table 3-27

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range P - Face of Primary Berm

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
P:B1:L125:02	< 0.50	73.4				
P:B1:L125:24	< 0.50	73.4				
P:B1:L125:46	1.089	330.2				
P:B1:L100:02	< 0.50	99.1				
P:B1:L100:24	< 0.50	99.1				
P:B1:L100:46	< 0.50	124.8	11.6	12350	6.1	< 1.0
P:B1:L75:02	< 0.50	99.1				
P:B1:L75:24	< 0.50	124.8				
P:B1:L75:46	< 0.50	86.3				
P:B1:L50:02	< 0.50	150.5				
P:B1:L50:24	< 0.50	< 50.0	2.0	2690	1.7	< 1.0
P:B1:L50:46	18.863	150.5				
P:B1:L50:68	< 0.50	< 50.0				
P:B1:L25:02	< 0.50	60.6				
P:B1:L25:24	< 0.50	124.8				
P:B1:L25:46	< 0.50	112.0				
P:B1:R25:02	32.76	484.2				
P:B1:R25:24	< 0.50	60.6				
P:B1:R25:46	< 0.50	86.3				
P:B1:R50:02	1.536	146.3	4.9	9300	4.3	< 1.0
P:B1:R50:24	< 0.50	< 50.0				
P:B1:R50:46	1.651	63.0				
P:B1:R75:02	10.363	1086.2				
P:B1:R75:24	4.98	301.0				
P:B1:R75:46	< 0.50	< 50.0				
P:B1:R100:02	0.619	51.1				
P:B1:R100:24	< 0.50	< 50.0				
P:B1:R100:46	< 0.50	63.0				
P:B1:R125:02	< 0.50	< 50.0				
P:B1:R125:24	< 0.50	< 50.0				
P:B1:R125:46	< 0.50	< 50.0				

Table 3-27 (Con't.)

Summary of Laboratory Analytical Data
Pre-Excavation Berm Soil Samples

Range P - Toe of Primary Berm

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
P:T1:L125:02	< 0.50	< 50.0				
P:T1:L125:24	< 0.50	< 50.0				
P:T1:L125:46	< 0.50	< 50.0	2.3	3200	2.0	< 1.0
P:T1:L100:02	0.505	86.8				
P:T1:L100:24	< 0.50	< 50.0				
P:T1:L100:46	< 0.50	< 50.0				
P:T1:L75:02	< 0.50	< 50.0				
P:T1:L75:24	< 0.50	63.0				
P:T1:L75:46	< 0.50	< 50.0				
P:T1:L50:02	0.790	157.5				
P:T1:L50:24	< 0.50	< 50.0	6.0	12400	7.5	< 1.0
P:T1:L50:46	< 0.50	< 50.0				
P:T1:L25:02	1.705	301.2				
P:T1:L25:24	< 0.50	52.9				
P:T1:L25:46	< 0.50	52.9				
P:T1:R25:02	6.018	1189.9				
P:T1:R25:24	0.529	< 50.0				
P:T1:R25:46	< 0.50	< 50.0				
P:T1:R50:02	7.064	588.7	85.4	7500	3.9	< 1.0
P:T1:R50:24	0.790	< 50.0				
P:T1:R50:46	< 0.50	< 50.0				
P:T1:R75:02	8.240	993.9				
P:T1:R75:24	< 0.50	66.0				
P:T1:R75:46	< 0.50	< 50.0				
P:T1:R100:02	2.634	483.3				
P:T1:R100:24	1.082	69.4				
P:T1:R100:46	< 0.50	< 50.0				
P:T1:R125:02	< 0.50	< 50.0				
P:T1:R125:24	< 0.50	< 50.0				
P:T1:R125:46	< 0.50	< 50.0				

Table 3-28

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range P - Face of Primary Berm

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
P:B1:L125:46	< 0.50	< 50.0				
P:B1:L125/L100:46	< 0.50	< 50.0				
P:B1:L100/L75:46	< 0.50	< 50.0				
P:B1:L75/L50:46	< 0.50	< 50.0				
P:B1:L75/L50:68	< 0.50	< 50.0	4.04	10000	5.70	< 1.00
P:B1:L50:68	< 0.50	< 50.0				
P:B1:L50/L25:46	< 0.50	< 50.0				
P:B1:L50/L25:68	< 0.50	< 50.0				
P:B1:L25/R25:46	< 0.50	< 50.0				
P:B1:R25/R50:46	< 0.50	< 50.0				
P:B1:R50/R75:46	< 0.50	< 50.0				
P:B1:R75/R100:46	< 0.50	< 50.0				
P:B1:R100/R125:46	< 0.50	< 50.0	2.67	3080	2.47	< 1.00
P:B1:R125:46	< 0.50	< 50.0				

Table 3-29

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range SE - Face of Pop-up Target Protectors

	TCLP Leachable Lead	Total Lead	Total Copper	Total Iron	Total Nickel	Total Antimony
Sample ID	**(mg/L)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
SE:125M:B:24	3.371	147.9				
SE:200M:C:24	< 0.50	< 50.0				
SE:250M:B:24	< 0.50	< 50.0				
SE:300M:C:24	< 0.50	< 50.0				
SE:515M:D:24	< 0.50	< 50.0				
SE:570M:C:24	< 0.50	< 50.0				
SE:630M:D:24	< 0.50	< 50.0				

Table 3-30

Summary of Laboratory Analytical Data
Post-Excavation Berm Soil Samples

Range SW - Face of Pop-up Target Protectors

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)	Total Copper (mg/kg)	Total Iron (mg/kg)	Total Nickel (mg/kg)	Total Antimony (mg/kg)
SW:100M:B:24	< 0.50	2607				
SW:125M:B:24	0.875	102.8				
SW:150M:B:24	< 0.50	< 50.0	7.6	10720	7.8	< 1.0
SW:200M:C:24	< 0.50	< 50.0				
SW:250M:B:24	< 0.50	< 50.0				
SW:300M:B:24	< 0.50	< 50.0				
SW:400M:C:24	< 0.50	< 50.0				
SW:460M:C:24	< 0.50	< 50.0				
SW:515M:C:24	< 0.50	< 50.0				
SW:570M:C:24	< 0.50	< 50.0				
SW:630M:B:24	< 0.50	< 50.0				
SW:740M:C:24	< 0.50	< 50.0	4.2	11720	7.2	< 1.0

Table 3-31

Summary of Laboratory Analytical Data
Ex-Situ Process Confirmation Samples

(Project Performance Criteria TCLP Leachable Lead < 5.0 mg/L)

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)
TSP-01	0.316	1600
TSP-02	< 0.50	2839
TSP-03	< 0.50	835.1
TSP-04	< 0.50	1386.9
TSP-05	< 0.50	1493.9
TSP-06	0.784	1985.8
TSP-07	< 0.50	1331.5
TSP-08	< 0.50	380.9
TSP-09	< 0.50	211.9
TSP-10	< 0.50	832.1
TSP-11	< 0.50	9588
TSP-12	< 0.50	420.6
TSP-13	< 0.50	175.5
TSP-14	< 0.50	138.8
TSP-15	< 0.50	650.1
TSP-16	< 0.50	153.0
TSP-17	< 0.50	204.3
TSP-18	< 0.50	1751.2
TSP-19	< 0.50	1690.8
TSP-20	< 0.50	1015.7
TSP-21	< 0.50	438.8
TSP-22	< 0.50	642.0
TSP-23	< 0.50	224.5
TSP-24	< 0.50	303.4
TSP-25	< 0.50	1732.3
TSP-26	< 0.50	136.6
TSP-27	< 0.50	57.7
TSP-28	< 0.50	326.6
TSP-29	< 0.50	621.4
TSP-30	< 0.50	320.9
TSP-31	< 0.50	656.5
TSP-32	< 0.50	398.2
TSP-33	< 0.50	313.0
TSP-34	< 0.50	< 50.0
TSP-35	< 0.50	217.6
TSP-36	1.615	309.8
TSP-37	< 0.50	79.6
TSP-38	< 0.50	210.7
TSP-39	< 0.50	587.4
TSP-40	< 0.50	194.0

Table 3-31 (Con't.)

Summary of Laboratory Analytical Data
Ex-Situ Process Confirmation Samples

(Project Performance Criteria TCLP Leachable Lead < 5.0 mg/L)

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)
TSP-41	< 0.50	442.6
TSP-42	< 0.50	458.6
TSP-43	< 0.50	277.8
TSP-44	< 0.50	72.8
TSP-45	< 0.50	140.2
TSP-46	< 0.50	252.5
TSP-47	< 0.50	280.9
TSP-48	< 0.50	112.5
TSP-49	< 0.50	65.4
TSP-50	< 0.50	5751
TSP-51	< 0.50	309.2
TSP-52	< 0.50	64.2
TSP-53	< 0.50	84.8
TSP-54	< 0.50	< 50.0
TSP-55	< 0.50	< 50.0
TSP-56	< 0.50	57.0

Table 3-32

Summary of Laboratory Analytical Data In-Situ Process Confirmation Samples

(Project Performance Criteria TCLP Leachable Lead < 5.0 mg/L)

Sample ID	TCLP Leachable Lead (mg/L)	Total Lead (mg/kg)
TS-A-01	< 0.50	< 50.0
TS-B-01	< 0.50	93.5
TS-B-02	< 0.50	176.7
TS-B-03	< 0.50	54.6
TS-B-04	< 0.50	117.3
TS-B-05	< 0.50	313.0
TS-B-06	< 0.50	< 50.0
TS-B-07	< 0.50	104.5
TS-C-01	< 0.50	126.6
TS-D-01	< 0.50	210.3
Range E	No In-Situ Processing Required	
TS-G-01	0.526	1036.1
TS-G-02	< 0.50	268.4
TS-H-01	< 0.50	502.6
TS-H-02	< 0.50	396.1
TS-H-03	< 0.50	298.6
TS-H-04	< 0.50	530.9
TS-H-05	< 0.50	1371.5
TS-H-06	< 0.50	847.9
TS-I-01	< 0.50	401.4
TS-I-02	< 0.50	391.9
TS-I-03	< 0.50	412.8
TS-I-04	< 0.50	372.2
TS-I-05	< 0.50	249.0
TS-J-01	< 0.50	69.6
TS-J-02	< 0.50	< 50.0
TS-K-01	< 0.50	< 50.0
Range KD	No In-Situ Processing Required	
TS-N-01	< 0.50	< 50.0
TS-O-01	< 0.50	< 50.0
TS-P-01	< 0.50	< 50.0
Range SE/SW	No In-Situ Processing Required	

Table 3-33

Summary of Air Monitoring Sample Analytical Results

Sample ID	Area	Location	Date	Total Lead (mg/m3)
227MMRGU1	Range G	Up Wind	2/27/98	< 0.0005
227MMRGD1	Range G	Down Wind	2/27/98	< 0.0005
227MMRGD2	Range G	Down Wind	2/27/98	< 0.0005
305MMRGU1	Range G	Up Wind	3/5/98	< 0.0006
305MMRGD1	Range G	Down Wind	3/5/98	< 0.0006
305MMRGD2	Range G	Down Wind	3/5/98	< 0.0006
310MMRHU1	Range H	Up Wind	3/10/98	< 0.0003
310MMRHD1	Range H	Down Wind	3/10/98	< 0.0003
310MMRHD2	Range H	Down Wind	3/10/98	< 0.0003
310MMRTU1	Processing	Up Wind	3/10/98	< 0.0003
310MMRTD1	Processing	Down Wind	3/10/98	< 0.0003
310MMRTD2	Processing	Down Wind	3/10/98	< 0.0003
317MMRTU1	Processing	Up Wind	3/17/98	< 0.008
317MMRTD1	Processing	Down Wind	3/17/98	< 0.008
317MMRTD2	Processing	Down Wind	3/17/98	< 0.008
323MMRTU1	Processing	Up Wind	3/23/98	< 0.008
323MMRTD1	Processing	Down Wind	3/23/98	< 0.008
323MMRTD2	Processing	Down Wind	3/23/98	< 0.008
323MMRKU1	Range K	Up Wind	3/23/98	< 0.008
323MMRKD1	Range K	Down Wind	3/23/98	< 0.008
323MMRKD2	Range K	Down Wind	3/23/98	< 0.008
331MMRTU1	Processing	Up Wind	3/31/98	< 0.008
331MMRTD1	Processing	Down Wind	3/31/98	< 0.008
331MMRTD2	Processing	Down Wind	3/31/98	< 0.008
331MMRIU1	Range I	Up Wind	3/31/98	< 0.01
331MMRID1	Range I	Down Wind	3/31/98	< 0.01
331MMRID2	Range I	Down Wind	3/31/98	< 0.01
406MMRTU1	Processing	Up Wind	4/6/98	< 0.008
406MMRTD1	Processing	Down Wind	4/6/98	< 0.008
406MMRTD2	Processing	Down Wind	4/6/98	< 0.008
406MMROU1	Range O	Up Wind	4/6/98	< 0.008
406MMROD1	Range O	Down Wind	4/6/98	< 0.008
406MMROD2	Range O	Down Wind	4/6/98	< 0.008

Table 3-33 (Con't.)

Summary of Air Monitoring Sample Analytical Results

Sample ID	Area	Location	Date	Total Lead (mg/m3)
418MMRTU1	Processing	Up Wind	4/18/98	< 0.01
418MMRTD1	Processing	Down Wind	4/18/98	< 0.01
418MMRTD2	Processing	Down Wind	4/18/98	< 0.01
418MMRSEU1	Range SE	Up Wind	4/18/98	< 0.010
418MMRSED1	Range SE	Down Wind	4/18/98	< 0.01
418MMRSED2	Range SE	Down Wind	4/18/98	< 0.01
421MMRTU1	Processing	Up Wind	4/21/98	< 0.008
421MMRTD1	Processing	Down Wind	4/21/98	< 0.008
421MMRTD2	Processing	Down Wind	4/21/98	< 0.008
421MMRSEU1	Range SE	Up Wind	4/21/98	< 0.010
421MMRSED1	Range SE	Down Wind	4/21/98	< 0.009
421MMRSED2	Range SE	Down Wind	4/21/98	< 0.009
428MMRTU1	Processing	Up Wind	4/28/98	< 0.008
428MMRTD1	Processing	Down Wind	4/28/98	< 0.008
428MMRTD2	Processing	Down Wind	4/28/98	< 0.008
428MMRBU1	Range B	Up Wind	4/28/98	< 0.008
428MMRBD1	Range B	Down Wind	4/28/98	< 0.008
428MMRBD2	Range B	Down Wind	4/28/98	< 0.008
508MMRTU1	Processing	Up Wind	5/8/98	0.012
508MMRTD1	Processing	Down Wind	5/8/98	0.009
508MMRTD2	Processing	Down Wind	5/8/98	< 0.009
508MMRBU1	Range B	Up Wind	5/8/98	< 0.05
508MMRBD1	Range B	Down Wind	5/8/98	< 0.01
508MMRBD2	Range B	Down Wind	5/8/98	< 0.009
512MMRPU1	Range P	Up Wind	5/12/98	< 0.008
512MMRPD1	Range P	Down Wind	5/12/98	< 0.008
512MMRPD2	Range P	Down Wind	5/12/98	< 0.008
512MMRBU1	Range B	Up Wind	5/12/98	< 0.008
512MMRBD1	Range B	Down Wind	5/12/98	< 0.008
512MMRBD2	Range B	Down Wind	5/12/98	< 0.008
518MMRTU1	Processing	Up Wind	5/18/98	< 0.008
518MMRTD1	Processing	Down Wind	5/18/98	< 0.008
518MMRTD2	Processing	Down Wind	5/18/98	< 0.008

4.0 ANALYTICAL DATA EVALUATION

As discussed in Sections 2.4 and 2.7, soil samples were collected before and after soil excavation activities. These pre- and post-excavation samples were analyzed in the field laboratory and/or Waste Stream Technologies (WST) laboratory for total lead and TCLP leachable lead. Prior to soil removal, pre-excavation samples were collected and analyzed in the field for total lead and TCLP leachable lead. Of the pre-excavation samples, 78 samples were also analyzed for total lead and TCLP leachable lead as duplicates by WST laboratory to provide confirmation of the field laboratory results. Following soil removal, post-excavation samples were collected and analyzed in the field for total lead and TCLP leachable lead. Of the post-excavation samples, 30 samples were also analyzed for total lead and TCLP leachable lead as duplicates by WST laboratory to provide confirmation of the field laboratory results.

The following paragraphs present a comparison of the field laboratory and WST laboratory results. The goal of the evaluation was to determine whether the field results are qualitatively and quantitatively similar to the WST results.

While analytical method detection limits varied between the field laboratory and WST laboratory, both utilized the same analytical methods as noted:

- Total Lead by SW-846, Method 6010.
- TCLP leachable lead by 40 CFR, Part 268, Appendix I (TCLP) SW-846, Method 1311 followed by USEPA Method 7420.

If the field results are qualitatively and quantitatively similar to WST results across a range of concentrations, then the field laboratory can be regarded as a reliable surrogate for the WST laboratory. On the other hand, if the field results differ substantially from the WST results, then the field results may not be a reliable predictor of results using the WST laboratory. The evaluation consists of two components:

- An evaluation of whether WST results confirm field results when lead was not detected by the field laboratory; and
- An evaluation of whether WST results are similar to field results when lead was detected by both laboratories.

Throughout the remainder of this discussion, the field result and WST result from a single duplicate sample are referred to as a "sample pair." Sample pairs are evaluated for four subsets of the data:

- Pre-Excavation Total Lead Results;
- Post-Excavation Total Lead Results;
- Pre-Excavation TCLP Leachable Lead Results; and
- Post-Excavation TCLP Leachable Lead Results.

Table 4-1 presents summary statistics for the each of the four data subsets. Summary statistics include the number of detects and non-detects using each laboratory. Table 4-1 also shows the number of sample pairs with detects using both laboratories; non-detects using both laboratories; and a detect using one laboratory and a non-detect using the other laboratory.

For each of the four data subsets, a simple comparison of the frequencies of detection using the two laboratory results reveals that lead was detected more frequently using the WST laboratory than using the field laboratory. This finding is not surprising, given that the WST laboratory had a lower detection limit than the field laboratory for both total and TCLP leachable lead.

Table 4-1
Summary Statistics for Analytical Results from Field Laboratory and WST Laboratory

Pre-Excavation Total Lead Results

	Field Result	WST Result	Number of Sample Pairs
	Detect	Detect	27
	Non-detect	Detect	23
	Detect	Non-detect	1
	Non-detect	Non-detect	26
	Non-detect	Not analyzed	1
Total Number of Detects	28	50	
Total Number of Non-detects	50	27	
Total Number of Not analyzed	0	1	
Total Number of Samples	78	78	78
Mean	302	224	
SD	770	628	

Post-Excavation Total Lead Results

	Field Result	WST Result	Number of Sample Pairs
	Detect	Detect	5
	Non-detect	Detect	12
	Detect	Non-detect	0
	Non-detect	Non-detect	13
Total Number of Detects	5	17	
Total Number of Non-detects	25	13	
Total Number of Samples	30	30	30
Mean	535	449	
SD	1898	2127	

Pre-Excavation TCLP Leachable Lead Results

	Field Result	WST Result	Number of Sample Pairs
	Detect	Detect	29
	Non-detect	Detect	35
	Detect	Non-detect	0
	Non-detect	Non-detect	13
	Non-detect	Not analyzed	1
Total Number of Detects	29	64	
Total Number of Non-detects	49	13	
Total Number of Not analyzed	0	1	
Total Number of Samples	78	78	78
Mean	12	9	
SD	46	31	

Post-Excavation TCLP Leachable Lead Results

	Field Result	WST Result	Number of Sample Pairs
	Detect	Detect	4
	Non-detect	Detect	16
	Detect	Non-detect	0
	Non-detect	Non-detect	9
	Not analyzed	Detect	1
Total Number of Detects	4	21	
Total Number of Non-detects	25	9	
Total Number of Not analyzed	1	0	
Total Number of Samples	30	30	30
Mean	35	25	
SD	120	97	

4.1 Pre-Excavation Total Lead Results

As Table 4-1 indicates, 78 pre-excavation duplicate samples were collected. All samples were analyzed in the field laboratory and at the WST laboratory for total lead. Total lead was detected above the detection limit of 50 mg/kg in 28 of the 78 samples (36%) using the field laboratory. Total lead was not detected above the detection limit in the remaining 50 samples. In one sample (Field ID E:B1:L25:24H), no WST analysis was conducted, resulting in 77 pre-excavation total lead results using the WST laboratory. Total lead was detected above the detection limit of 4.1 mg/kg in 50 samples (65%) using the WST laboratory, and was not detected in the remaining 27 samples.

Of the 28 samples in which total lead was detected by the field laboratory, the WST laboratory also detected total lead in 27 samples (96%). Figure 4-1 presents a graphical comparison of the field and WST total lead results in samples with a detect using both laboratories. Total lead was not detected using both laboratories in 26 of the 77 sample pairs. Therefore, in 53 of 77 sample pairs (69%), the field and WST results were qualitatively similar. In 19 of the 27 sample pairs with detects using both laboratories (70%), total lead was detected at a higher concentration by the field laboratory than by the WST laboratory. In the remaining 8 of 27 samples with detects using both laboratories, the WST laboratory reported a higher concentration than the field laboratory.

In one sample (Field ID T1:L50:46 and WST ID WS40643; from Range N), total lead was not detected above the detection limit of 4.1 mg/kg using the WST laboratory, but was detected at 51.4 mg/kg using the field laboratory. Considering that the field laboratory detection limit was 50 mg/kg, and that total lead was detected only minimally above the field detection limit, the field and WST results in this sample can be viewed as similar.

In the remaining 23 sample pairs, total lead was not detected above 50 mg/kg in the field, but was detected above 4.1 mg/kg by the WST laboratory. Figure 4-2 presents a graphical comparison of the field and WST total lead results in samples with a detect using one laboratory and a non-detect using the other laboratory. As shown in the figure, in the majority of pre-excavation samples, total lead was not detected above 50 mg/kg in the field and was detected between 4.1 mg/kg and 50 mg/kg in 20 of 23 samples (87%). In three of 23 samples, total lead was not detected in the field but was detected above 50 mg/kg by the WST laboratory at concentrations from 52.8 mg/kg to 81 mg/kg. Therefore, in 87% of samples with a non-detect field result, the WST laboratory confirmed that total lead was not present above 50 mg/kg.

In pre-excavation samples, total lead was not detected in 50 of 78 samples using the field laboratory. Of these 50 samples with field non-detect results, 26 samples were also non-detect using the WST laboratory, and in 20 samples total lead was detected by the WST laboratory at a concentration below the field laboratory detection limit. Therefore, 46 of 50 non-detect field results for total lead (92%) were confirmed by the WST laboratory.

This evaluation reveals a high degree of consistency between the field and WST laboratories when total lead was not detected in the field, confirming that the field laboratory is a reliable surrogate for the WST laboratory.

Figure 4-1 Total Lead Results With Detects by Both Labs

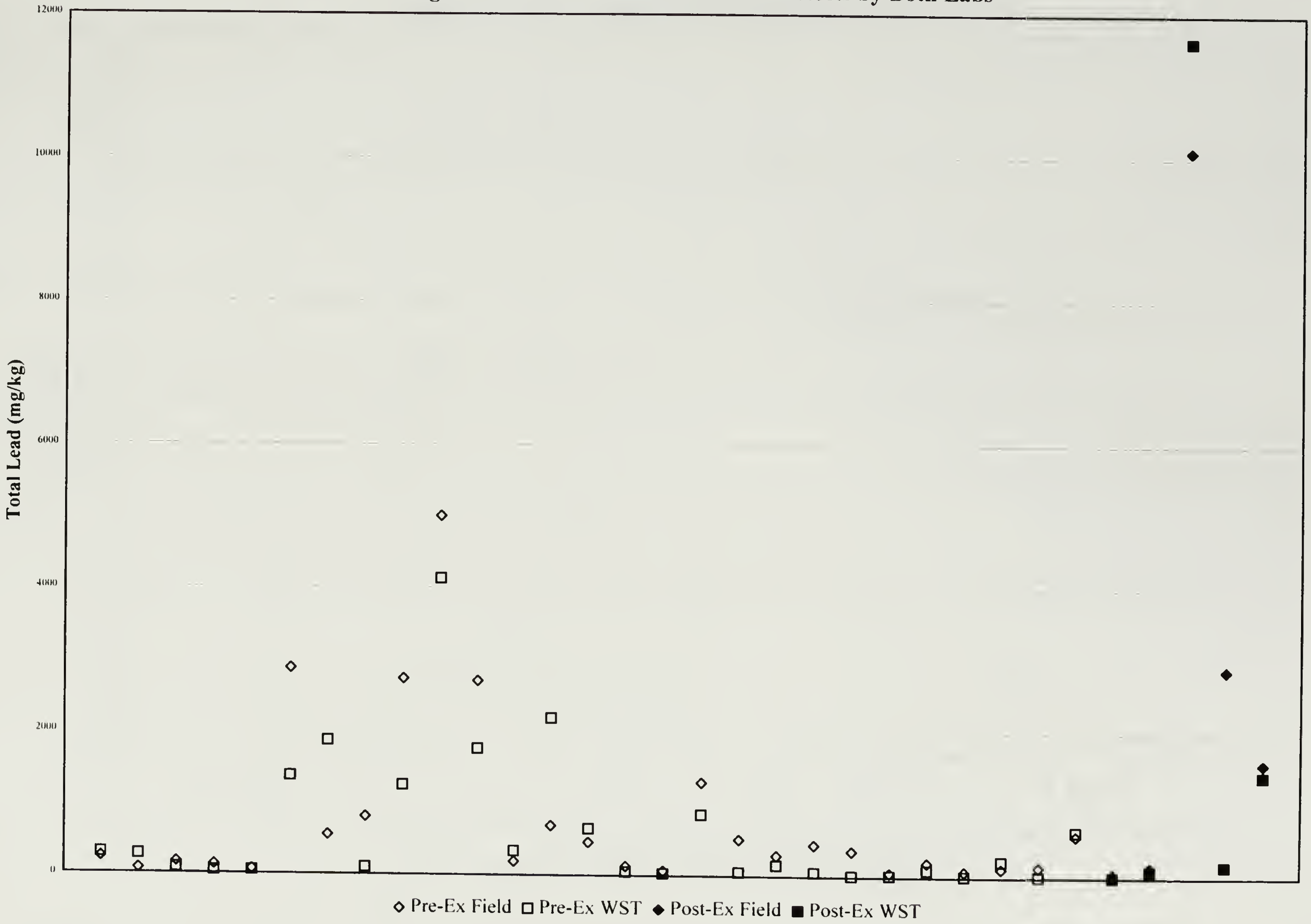
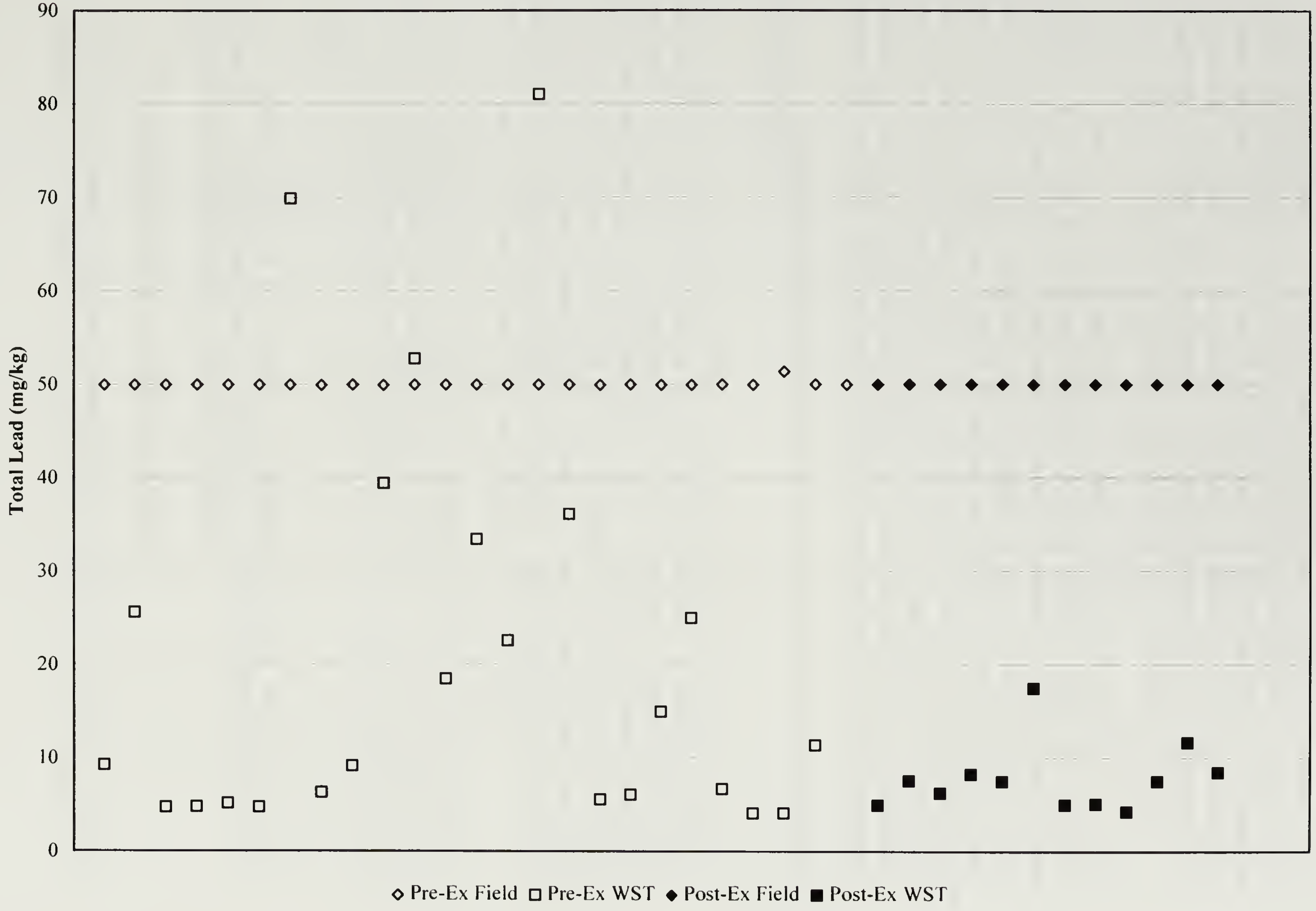


Figure 4-2 Total Lead Results With Detects by Only One Lab



4.2 Post-Excavation Total Lead Results

As shown in Table 4-1, 30 post-excavation duplicate samples were collected and analyzed in the field laboratory and at the WST laboratory for total lead. Total lead was detected above the detection limit of 50 mg/kg in 5 of the 30 samples (17%) using the field laboratory. Total lead was not detected above the detection limit in the remaining 25 samples. Using the WST laboratory, total lead was detected above the detection limit of 4.1 mg/kg in 17 samples (57%), and was not detected in the remaining 13 samples.

Of the five samples in which total lead was detected by the field laboratory, the WST laboratory also detected total lead in all five samples (100%). Figure 4-1 presents a graphical comparison of the field and WST total lead results in samples with a detect using both laboratories. Total lead was not detected using both laboratories in 13 of the 30 sample pairs. Therefore, in 18 of 30 sample pairs (60%), the field and WST results were qualitatively similar. In four of the five sample pairs with detects using both laboratories (80%), total lead was detected at a higher concentration by the field laboratory than by the WST laboratory. In the remaining sample with detects using both laboratories, the WST laboratory reported a higher concentration than the field laboratory.

There were no samples in which total lead was detected in the field but not detected using the WST laboratory.

In the remaining 12 sample pairs, total lead was not detected above 50 mg/kg in the field, but was detected above 4.1 mg/kg by the WST laboratory. Figure 4-2 presents a graphical comparison of the field and WST total lead results in samples with a detect using one laboratory and a non-detect using the other laboratory. As shown in the figure, total lead was not detected in the field and was detected between 4.1 mg/kg and 50 mg/kg in all 12 post-excavation samples with a detect using one laboratory and a non-detect using the other laboratory. Therefore, in all samples with a non-detect field result, the WST laboratory confirmed that total lead was not present above 50 mg/kg.

In post-excavation samples, total lead was not detected by the field laboratory in 25 of 30 samples. The WST laboratory reported either non-detect (13 samples) or detects below the field laboratory detection limit (12 samples) in all 25 samples. Therefore, the WST laboratory confirms non-detect total lead field results in 100% of post-excavation samples.

This evaluation reveals a high degree of consistency between the field and WST laboratories when total lead was not detected in the field, confirming that the field laboratory is a reliable surrogate for the WST laboratory.

4.3 Pre-Excavation TCLP Leachable Lead Results

As Table 4-1 indicates, 78 pre-excavation duplicate samples were collected. All samples were analyzed in the field laboratory and at WST laboratory for TCLP leachable lead.

TCLP leachable lead was detected above the detection limit of 0.5 mg/L in 29 of the 78 samples (37%) using the field laboratory. TCLP leachable lead was not detected above the detection limit in the remaining 49 samples. In one sample (Field ID E:B1:L25:24H), no WST analysis was conducted, resulting in 77 pre-excavation TCLP leachable lead results using the WST laboratory. TCLP leachable lead was detected above the detection limit of 0.015 mg/kg in 64 samples (83%) using the WST laboratory, and was not detected in the remaining 13 samples.

Of the 29 samples in which TCLP leachable lead was detected by the field laboratory, the WST laboratory also detected TCLP leachable lead in all 29 samples (100%). Figure 4-3 presents a graphical comparison of the field and WST TCLP leachable lead results in samples with a detect using both laboratories. TCLP leachable lead was not detected using both laboratories in 13 of the 77 sample pairs. Therefore, in 42 of 77 sample pairs (55%), the field and WST results were qualitatively similar. In 17 of the 29 sample pairs with detects using both laboratories (59%), TCLP leachable lead was detected at a higher concentration by the field laboratory than by the WST laboratory. In the remaining 12 of 29 samples with detects using both laboratories, the WST laboratory reported a higher concentration than the field laboratory.

There were no samples in which TCLP leachable lead was detected in the field but not detected using the WST laboratory.

In the remaining 35 sample pairs, TCLP leachable lead was not detected above 0.5 mg/L in the field, but was detected above 0.015 mg/L by the WST laboratory. Figure 4-4 presents a graphical comparison of the field and WST TCLP leachable lead results in samples with a detect using one laboratory and a non-detect using the other laboratory. As shown in the figure, in the majority of pre-excavation samples, TCLP leachable lead was not detected above 0.5 mg/L in the field and was detected between 0.015 mg/L and 0.5 mg/L in 27 of 35 samples (77%). In eight of 35 samples, TCLP leachable lead was not detected in the field but was detected above 0.015 mg/L by the WST laboratory at concentrations from 0.522 mg/L to 2.55 mg/L. Therefore, in 77% of samples with a non-detect field result, the WST laboratory confirmed that TCLP leachable lead was not present above 0.5 mg/L.

In pre-excavation samples, TCLP leachable lead was not detected in 49 of 78 samples using the field laboratory. Of these 49 samples with field non-detect results, 13 samples were also non-detect using the WST laboratory, and in 27 samples TCLP leachable lead was detected by the WST laboratory at a concentration below the field laboratory detection limit. Therefore, 40 of 49 non-detect field results for TCLP leachable lead (82%) were confirmed by the WST laboratory.

This evaluation reveals a high degree of consistency between the field and WST laboratories when TCLP leachable lead was not detected in the field, confirming that the field laboratory is a reliable surrogate for the WST laboratory.

Figure 4-3 TCLP Leachable Lead Results With Detects by Both Labs

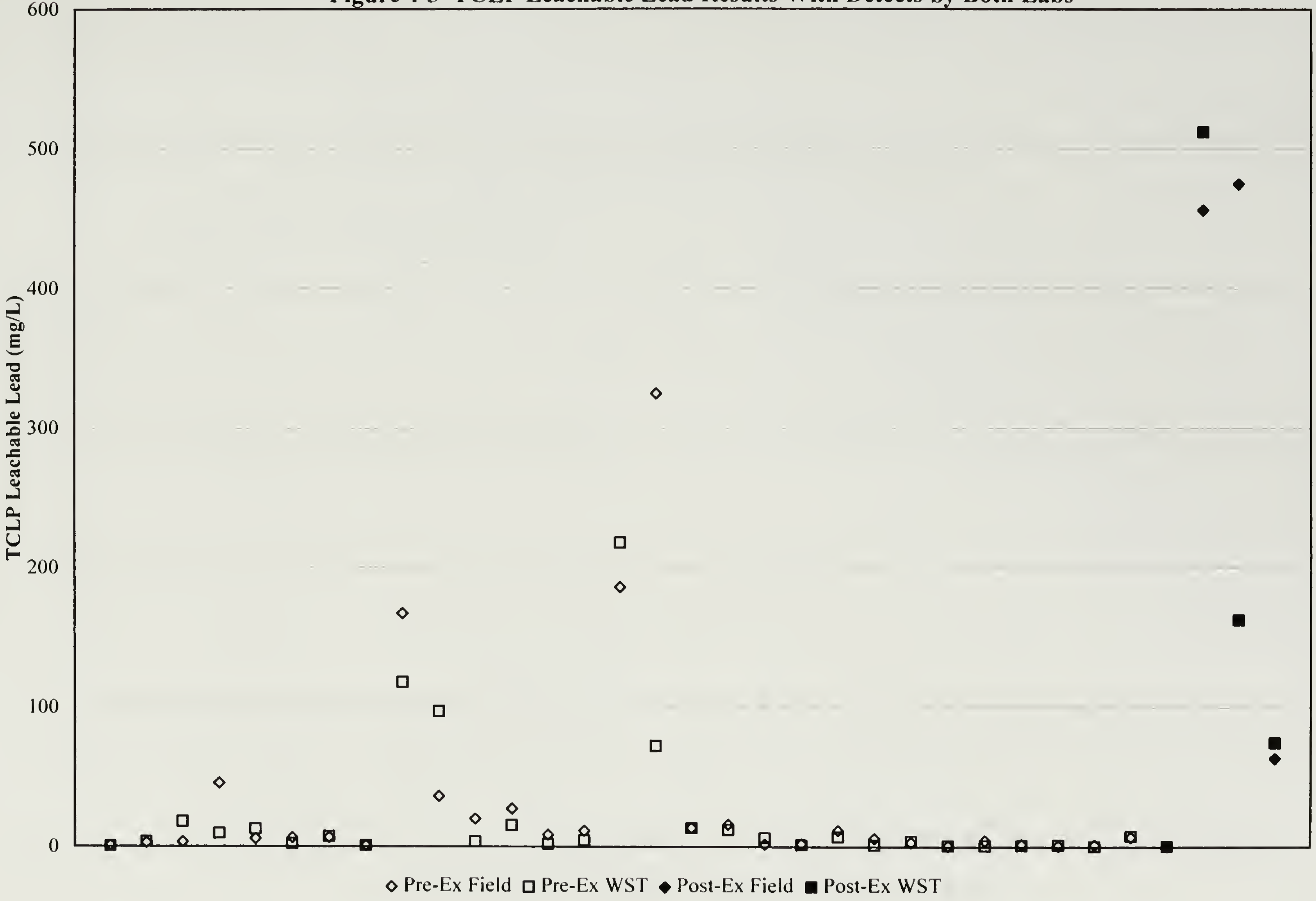
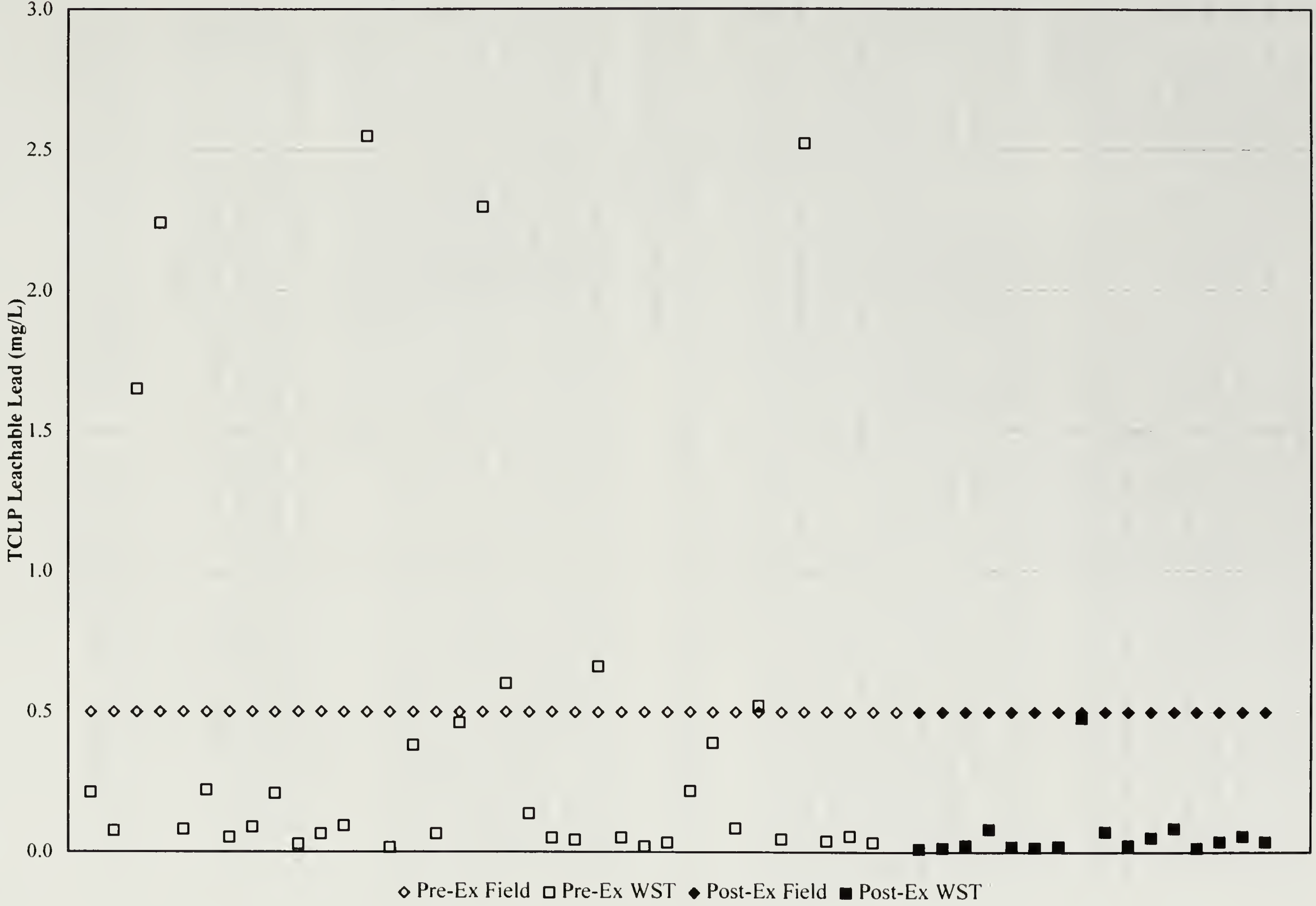


Figure 4-4 TCLP Lead Results With Detects by Only One Lab



4.4 Post-Excavation TCLP Leachable Lead Results

As shown in Table 4-1, 30 post-excavation duplicate samples were collected and analyzed in the field laboratory and at the WST laboratory for TCLP leachable lead. In one sample (ID), no field analysis was conducted, resulting in 29 pre-excavation TCLP leachable lead results using the field laboratory. TCLP leachable lead was detected above the detection limit of 0.5 mg/L in 4 of the 29 samples (14%) using the field laboratory. TCLP leachable lead was not detected above the detection limit in the remaining 25 samples. Using the WST laboratory, TCLP leachable lead was detected above the detection limit of 0.015 mg/L in 21 samples (70%), and was not detected in the remaining 9 samples.

Of the four samples in which TCLP leachable lead was detected by the field laboratory, the WST laboratory also detected TCLP leachable lead in all four samples (100%). Figure 4-3 presents a graphical comparison of the field and WST TCLP leachable lead results in samples with a detect using both laboratories. TCLP leachable lead was not detected using both laboratories in 9 of the 29 sample pairs. Therefore, in 13 of 29 sample pairs (45%), the field and WST results were qualitatively similar. In one of the four sample pairs with detects using both laboratories (25%), TCLP leachable lead was detected at a higher concentration by the field laboratory than by the WST laboratory. In the remaining three of four samples with detects using both laboratories, the WST laboratory reported a higher concentration than the field laboratory.

There were no samples in which TCLP leachable lead was detected in the field but not detected using the WST laboratory.

In the remaining 16 sample pairs, TCLP leachable lead was not detected above 0.5 mg/L in the field, but was detected above 0.015 mg/L by the WST laboratory. Figure 4-4 presents a graphical comparison of the field and WST TCLP leachable lead results in samples with a detect using one laboratory and a non-detect using the other laboratory. As shown in the figure, TCLP leachable lead was not detected in the field and was detected between 0.015 mg/L and 0.5 mg/L in all 16 post-excavation samples with a detect using one laboratory and a non-detect using the other laboratory. Therefore, in all samples with a non-detect field result, the WST laboratory confirmed that TCLP leachable lead was not present above 0.5 mg/L.

In post-excavation samples, TCLP leachable lead was not detected by the field laboratory in 25 of 30 samples. The WST laboratory reported either non-detect (9 samples) or detects below the field laboratory detection limit (16 samples) in all 25 samples. Therefore, the WST laboratory confirms non-detect TCLP leachable lead field results in 100% of post-excavation samples.

This evaluation reveals a high degree of consistency between the field and WST laboratories when TCLP leachable lead was not detected in the field, confirming that the field laboratory is a reliable surrogate for the WST laboratory.

4.5 Summary of Analytical Data Evaluation

This section has presented a comparison of field and WST laboratory results of total lead and TCLP leachable lead analyses of duplicate pre- and post-excavation soil samples. A comparison of frequency of detection indicates that both total lead and TCLP leachable lead were detected more frequently using the WST laboratory than using the field laboratory, owing to the lower detection limit achieved by the WST laboratory.

In virtually all samples in which lead was detected by the field laboratory, lead was also detected by the WST laboratory. When lead was not detected by the field laboratory, the WST laboratory confirmed this finding in most pre-excavation samples (92% of total lead results, and 82% of TCLP leachable lead results) and in all post-excavation samples (both total lead and TCLP leachable lead results).

In conclusion, this evaluation has demonstrated that the field laboratory results and the WST laboratory results are highly consistent for both total lead and TCLP leachable lead. This finding indicates that the field laboratory is a reliable surrogate for the WST laboratory.

5.0 REFERENCES

The following is a list of the various documents and correspondence associated with the development and implementation of this project.

USEPA Region I Administrative Order SDWA I-97-1030 (dated July 28, 1997).

USEPA Region I letter to NGB (dated July 30, 1998) modifying the Administrative Order to instead of covering the berms with impermeable liners, to proceed with Sevenson's MAECTITE technology to remove lead munitions form the soil in the berms.

Draft Work Plan (dated August 29, 1997).

MADEP Comments (dated October 1, 1997) on Draft Work Plan.

USEPA Comments (dated October 8, 1997) on Draft Work Plan.

October 16, 1997 meeting of USEPA, MADEP, NGB, MAARNG, Ogden and Sevenson to discuss comments on Draft Work Plan.

NGB Response to USEPA Comments on the Draft Work Plan (dated October 24, 1998).

NGB Response to MADEP Comments on the Draft Work Plan (dated October 24, 1998).

October 29, 1997 meeting of USEPA, MADEP, NGB, MAARNG, Ogden and Sevenson to discuss responses to comments on Draft Work Plan.

Memorandum (dated November 6, 1998) providing a summary of October 29 ,1998 meeting of USEPA, MADEP, NGB, MAARNG, Ogden and Sevenson to discuss resolution of issues with Draft Work Plan and responses to comments.

USEPA Conditional Approval of the Draft Work Plan (dated August 29, 1997) letter to NGB (dated December 24, 1998).

Revised Work Plan (dated January 14, 1998).

USEPA Region I Approval of the Revised Work Plan (dated January 14, 1998) letter to NGB (dated January 30, 1998).

Ogden's Notification of Sample Collection Activity letter to USEPA (dated January 30, 1998).

Ogden letter to USEPA (dated February 12, 1998) transmitting "Errata Sheets" to the Revised Work Plan.

USEPA letter to Ogden (dated March 2, 1998) regarding concerns over proposed in-situ processing methods.

Ogden letter to USEPA (dated March 2, 1998) responding to stated concerns over in-situ processing methods and clarification of methods to be implemented.

Monthly Progress Report No. 1 (dated October 9, 1997).

Monthly Progress Report No. 2 (dated November 6, 1997).

Monthly Progress Report No. 3 (dated December 4, 1997).

Monthly Progress Report No. 4 (dated January 8, 1998).

Monthly Progress Report No. 5 (dated February 6, 1998).

Monthly Progress Report No. 6 (dated March 10, 1998).

Monthly Progress Report No. 7 (dated April 10, 1998).

Monthly Progress Report No. 8 (dated May 6, 1998).

Monthly Progress Report No. 9 (dated June 10, 1998).

Monthly Progress Report No. 10 (dated July 8, 1998).

Monthly Progress Report No. 11 (dated August 10, 1998).

Monthly Progress Report No. 12 (dated September 2, 1998).

Transmittals of Data to USEPA's On-site Representative including:

- Range A pre-excavation data (May 5, 1998).
- Range A post-excavation and in-situ process confirmation data (June 17, 1998).
- Range B pre-excavation data (April 27, 1998).
- Range B post-excavation and in-situ process confirmation data (May 26, 1998).
- Range C pre-excavation data (May 26, 1998 and June 9, 1998).
- Range C post-excavation and in-situ process confirmation data (June 9, 1998).
- Range D pre-excavation data (May 5, 1998).
- Range D post-excavation and in-situ process confirmation data (May 27, 1998).
- Range E pre-excavation data (April 16, 1998).
- Range E post-excavation data (May 27, 1998).
- Range G pre-excavation data (March 3, 1998).

- Range G post-excavation (April 30, 1998) and in-situ process confirmation data (April 30, 1998).
- Range H pre-excavation data (March 6, 1998).
- Range H post-excavation data (May 5, 1998) and in-situ process confirmation data (April 30, 1998).
- Range I pre-excavation data (March 16, 1998).
- Range I post-excavation data (April 30, 1998) and in-situ process confirmation data (April 30, 1998).
- Range J pre-excavation data (March 18, 1998).
- Range J post-excavation data (April 30, 1998) and in-situ process confirmation data (April 30, 1998).
- Range K pre-excavation data (March 18, 1998).
- Range K post-excavation and in-situ process confirmation data (April 30, 1998).
- Range KD pre-excavation data (April 1, 1998).
- Range KD post-excavation data (April 30, 1998).
- Range N pre-excavation data (March 25, 1998).
- Range N post-excavation data (April 30, 1998) and in-situ process confirmation data (April 30, 1998).
- Range O pre-excavation data (April 3, 1998).
- Range O post-excavation data and in-situ process confirmation data (May 27, 1998).
- Range P pre-excavation data (April 7, 1998).
- Range P post-excavation data and in-situ process confirmation data (May 27, 1998).
- Range SE post-excavation data (April 20, 1998).
- Range SW post-excavation data (April 20, 1998).
- Ex-situ process confirmation data (March 25, 1998; April 7, 1998; April 30, 1998; May 26, 1998; June 17, 1998)

Daily Work Progress Reports (Maintained on-site and in project file).

NGB letter to USEPA (dated June 11, 1998) requesting change to the Revised Work Plan regarding management of oversized material.

USEPA letter to NGB (dated June 18, 1998) responding to request for change to Revised Work Plan concerning management of oversized material.

USEPA letter to NGB (dated December 15, 1998) providing Conditional Approval of the Draft Completion of Work Report (dated September 3, 1998) conditional upon incorporation of comments attached to the letter.

6.0 CERTIFICATION OF WORK

This sections serves to provide Ogden Environmental and Energy Services, Inc.'s certification that the work was completed in accordance with and to satisfy the requirements of the Administrative Order. This certification of work is intended to meet the requirements of Section XIV. Work to be Performed; Completion of Work Item No. 87 of the Administrative Order.

In their role as Supervising Contractor, Ogden Environmental and Energy Services, Inc. provided full-time, on-site supervision of the activities implemented for the National Guard Bureau. The activities implemented were intended to meet the requirements of the Revised Work Plan (dated January 14, 1998) including the additional requirements enacted by USEPA Region I in their Conditional Approval of the Draft Work Plan letter (dated December 24, 1997) and their Approval of the Revised Work Plan letter (dated January 20, 1998). As a result of Ogden's presence on-site during implementation of the activities outlined in the Revised Work Plan, Ogden asserts that the work was substantially completed in accordance with and to satisfy the requirements of the Administrative Order including those requirements defined in the above referenced documents and the modified Scope of Work contained in USEPA Region I's letter dated July 30, 1997.

APPENDIX A

RANGE SPECIFIC PROCESSING PLANS

Processing Plan - Actual Completed

Range A - Primary Berm

	L75	L50	L25	CP	R25	R50	R75	R100
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT		Exc	Exc	Exc	Exc	Exc	Exc	Exc
4 - 6 FT		Exc	Exc	Exc	Exc	Exc	Exc	Exc
6 - 8 FT		Exc	Exc	Exc	Exc	Exc	Exc	Exc
8 - 10 FT		Exc	Exc	Exc	Exc	Exc	Exc	Exc

Range A - Primary Toe

	L75	L50	L25	CP	R25	R50	R75
0 - 2 FT			Exc	Exc	Exc	Exc	
2 - 4 FT							
4 - 6 FT							

Range A - Secondary Berm

	L75	L50	L25	CP	R25	R50	R75
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT			Exc	Exc	Exc	Exc	
4 - 6 FT							

Range A - Seconday Toe

	L75	L50	L25	CP	R25	R50	R75
0 - 2 FT		In-Situ		In-Situ			In-Situ
2 - 4 FT							
4 - 6 FT							

Processing Plan - Actual Completed

Range B - Berm (Corrected Sample Locations)

	L300	L275	L250	L225	L200	L175	L150	L125	L100	L75	L50	L25
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT					In-Situ	In-Situ	In-Situ	In-Situ		In-Situ	In-Situ	In-Situ
4 - 6 FT										In-Situ	In-Situ	
6 - 8 FT												
8 - 10 FT												
10 - 12 FT												

	R25	R50	R75	R100	R125	R150	R175	R200	R225	R250	R275	R300
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT	In-Situ	In-Situ	In-Situ	In-Si |	In-Situ	In-Situ	In-Situ		In-Situ	In-Situ	In-Situ	
4 - 6 FT	In-Situ	In-Situ			In-Situ	In-Situ	In-Situ		In-Situ	In-Situ	In-Situ	
6 - 8 FT		In-Situ			In-Situ	In-Situ			In-Situ	In-Situ		
8 - 10 FT		In-Situ										
10 - 12 FT												

Range B - Toe (Corrected Sample Locations)

	L300	L275	L250	L225	L200	L175	L150	L125	L100	L75	L50	L25
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT							In-Situ	In-Situ		In-Situ	In-Situ	In-Situ
4 - 6 FT								In-Situ		In-Situ		In-Situ
6 - 8 FT								In-Situ		In-Situ		In-Situ
8 - 10 FT								In-Situ				
10 - 12 FT								In-Situ				
12 - 14 FT												

	R25	R50	R75	R100	R125	R150	R175	R200	R225	R250	R275	R300
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT	In-Situ	In-Situ									In-Situ	
4 - 6 FT	In-Situ	In-Situ										
6 - 8 FT	In-Situ	In-Situ										
8 - 10 FT	In-Situ											
10 - 12 FT												

Processing Plan - Actual Completed

Range C - Primary Berm

	L150	L125	L100	L75	L50	L25	CP	R25	R50	R75	R100	R125	R150
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT							In-Situ		In-Situ			In-Situ	In-Situ
4 - 6 FT							In-Situ						In-Situ
6 - 8 FT													
8 - 10 FT													

Range C - Primary Toe

	L150	L125	L100	L75	L50	L25	CP	R25	R50	R75	R100	R125	R150
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT													
4 - 6 FT													
6 - 8 FT													
8 - 10 FT													

Range C - Secondary Berm

No "Left" portion of secondary berm.

	CP	R25	R50	R75	R100	R125	R150
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT							
4 - 6 FT							
6 - 8 FT							
8 - 10 FT							

Range C - Seconday Toe

No "Left" portion of secondary toe.

	CP	R25	R50	R75	R100	R125	R150
0 - 2 FT		In-Situ					
2 - 4 FT		In-Situ					
4 - 6 FT		In-Situ					
6 - 8 FT							
8 - 10 FT							

Processing Plan - Actual Completed

Range D - Primary Berm

	L50	L25	R25	R50
0 - 2 FT	Exc	Exc	Exc	Exc
2 - 4 FT		In-Situ		
4 - 6 FT				

Range D - Primary Toe

	L50	L25	R25	R50
0 - 2 FT	In-Situ	In-Situ	In-Situ	In-Situ
2 - 4 FT				
4 - 6 FT				

Processing Plan - Actual Completed

Range E - Primary Berm High Portion

	L100	L75	L50	L25	CP	R25	R50	R100
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT								
4 - 6 FT								

Range E - Primary Berm Low Portion

	L175	L150	L125	L100	L75	L50	L25	CP	R25	R50	R75	R100	R125	R150	R175
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT															
4 - 6 FT															

Range E - Primary Toe

	L175	L150	L125	L100	L75	L50	L25	CP	R25	R50	R75	R100	R125	R150	R175
0 - 2 FT															
2 - 4 FT															
4 - 6 FT															

Processing Plan - Actual Completed

Range G - Primary Berm

	L75	L50	L25	CP	R25	R50	R75
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT		Exc	Exc	Exc	Exc	Exc	Exc
4 - 6 FT			In-Situ		In-Situ		
6 - 8 FT					In-Situ		

Range G - Primary Toe

	L75	L50	L25	CP	R25	R50	R75
0 - 2 FT	Exc	Exc	Exc		Exc	Exc	Exc
2 - 4 FT	In-Situ		In-Situ	In-Situ	In -	Situ	In-Situ
4 - 6 FT							
6 - 8 FT							

Processing Plan - Actual Completed

Range H - Primary Berm

	L100	L75	L50	L25	CP	R25	R50	R75	R100
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT	In-Situ		Exc	Exc	Exc	Exc	Exc	Exc	
4 - 6 FT	In-Situ		Exc	Exc	Exc	Exc	Exc	Exc	
6 - 8 FT	In-Situ		Exc	Exc	Exc	Exc	In-Situ		
8 - 10 FT		In-S	Exc	Exc	In-Situ				
10 - 12 FT			In-Situ	In-Situ	In-Situ				
12 - 14 FT			In-Situ		In-Situ				
14 - 16 FT									

Range H - Primary Toe

	L100	L75	L50	L25	CP	R25	R50	R75	R100
0 - 2 FT			In-Situ		In-Situ		In-Situ		
2 - 4 FT									
4 - 6 FT									

Processing Plan - Actual Completed

Range I - Primary Berm

	L100	L75	L50	L25	CP	R25	R50	R75	R100
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT	Exc	Exc	Exc	Exc	Exc	Exc	In-Situ	In-Situ	In-Situ
4 - 6 FT	In-Situ		In-Situ		In-Situ	In-Situ		In-Situ	
6 - 8 FT	In-Situ		In-Situ						
8 - 10 FT			In-Situ						
10 - 12 FT			In-Situ						
12 - 14 FT									

Range I - Primary Toe

	L100	L75	L50	L25	CP	R25	R50	R75	R100
0 - 2 FT			In-Situ	In-Situ	In-Situ	In-Situ	In-Situ	In-Situ	In-Situ
2 - 4 FT			In-Situ	In-Situ	In-Situ				In-Situ
4 - 6 FT									

Range I - Secondary Berm

	L100	L75	L50	L25	CP	R25	R50	R75	R100
0 - 2 FT			Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT				In-Situ	Exc	Exc	Exc		
4 - 6 FT					In-Situ		In-Situ		
6 - 8 FT					In-Situ				
8 - 10 FT									

Range I - Secondary Toe

	L100	L75	L50	L25	CP	R25	R50	R75	R100
0 - 2 FT		In-Situ		In-Situ	In-Situ	In-Situ			
2 - 4 FT				In-Situ	In-Situ	In-Situ			
4 - 6 FT					In-Situ				
6 - 8 FT									

Processing Plan - Actual Completed

Range J - Primary Berm High Portion

	L75	L50	L25	R25	R50	R75
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT	In-Sit	Exc	Exc	Exc	Exc	-Situ
4 - 6 FT	In-Situ				In-Situ	
6 - 8 FT						
8 - 10 FT						

Range J - Primary Berm Low Portion

	L75	L50	L25	R25	R50	R75
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT	In-Sit	Exc	Exc	Exc	Exc	-Situ
4 - 6 FT						

Range J - Primary Toe

	L75	L50	L25	R25	R50	R75
0 - 2 FT		In-Situ	In-Situ	In-Situ		
2 - 4 FT						
4 - 6 FT						

Processing Plan - Actual Completed

Range K - Primary Berm

	L106+	L100	L75	L50	L25	CP	R25	R50	R75	R100
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT		Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc
4 - 6 FT		Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc
6 - 8 FT		Exc	Exc	Exc	Exc	Exc	Exc	Exc		
8 - 10 FT		Exc	Exc	Exc	Exc					
10 - 12 FT		Exc	Exc	Exc	Exc					
12 - 14 FT			Exc	Exc	Exc					
14 - 16 FT			In-S	Exc	Exc					
16 - 18 FT			In-Situ							
18 - 20 FT										

Range K - Primary Toe

	L100	L75	L50	L25	CP	R25	R50	R75	R100
0 - 2 FT	In-Situ	In-Situ	In-Situ	In-Situ	In-Situ	In-Situ	In-Situ	In-Situ	In-Situ
2 - 4 FT									
4 - 6 FT									

Processing Plan - Actual Completed

Range KD - Primary Berm

	L75	L50	L25	CP	R25	R50	R75
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT		Exc	Exc	Exc	Exc	Exc	
4 - 6 FT							

Range KD - Primary Toe

	L75	L50	L25	R25	R50	R75
0 - 2 FT						
2 - 4 FT						
4 - 6 FT						

Processing Plan - Actual Completed

Range N - Primary Berm

	L200	L175	L150	L125	L100	L75	L50	L25	R25	R50	R75	R100	R125	R150	R175	R200
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	
2 - 4 FT						In-Situ						In-Situ				
4 - 6 FT																

Range N - Primary Toe

	L200	L175	L150	L125	L100	L75	L50	L25	R25	R50	R75	R100	R125	R150	R175	R200
0 - 2 FT					In-Situ											
2 - 4 FT																
4 - 6 FT																

Processing Plan - Actual Completed

Range O - Primary Berm

	L75	L50	L25	R25	R50
0 - 2 FT		Exc	Exc	Exc	Exc
2 - 4 FT		In-Situ			
4 - 6 FT		In-Situ			
6 - 8 FT					

Range O - Primary Toe

	L50	L25	R25	R50
0 - 2 FT				
2 - 4 FT				
4 - 6 FT				

Range O - Secondary Berm

	L50	L25	R25	R50
0 - 2 FT	Exc	Exc	Exc	Exc
2 - 4 FT			In-Situ	In-Situ
4 - 6 FT			In-Situ	In-Situ
6 - 8 FT			In-Situ	In-Situ
8 - 10 FT				

Range O - Secondary Toe

	L50	L25	R25	R50
0 - 2 FT	In-Situ		In-Situ	In-Situ
2 - 4 FT	In-Situ			In-Situ
4 - 6 FT				

Processing Plan - Actual Completed

Range P - Primary Berm

	L125	L100	L75	L50	L25	R25	R50	R75	R100	R125
0 - 2 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc
2 - 4 FT	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc	Exc
4 - 6 FT				In-Situ						
6 - 8 FT										

Range P - Primary Toe

	L125	L100	L75	L50	L25	R25	R50	R75	R100	R125
0 - 2 FT						In-Situ	In-Situ	In-Situ		
2 - 4 FT										
4 - 6 FT										

APPENDIX B

AIR MONITORING DATA

CENTRAL PROCESSING AREA

SEVENSON ENVIRONME[illegible] SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL				SIX SECOND		READINGS					
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980305	125145	0	0.019	1.0	0.008	0.008	0.005	0.005	0.005	0.005	0.005	0.004	0.005	0.004	0.005
2	980305	125315	0	0.019	1.0	0.009	0.006	0.005	0.005	0.004	0.005	0.004	0.005	0.005	0.004	0.005
3	980305	125451	0	0.019	1.0	0.011	0.012	0.013	0.010	0.011	0.010	0.008	0.007	0.007	0.006	0.010
4	980305	125611	0	0.019	1.0	0.013	0.008	0.073	0.084	0.072	0.147	0.104	0.068	0.028	0.017	0.061
5	980305	130244	0	0.019	1.0	0.005	0.005	0.005	0.005	0.004	0.005	0.005	0.005	0.005	0.005	0.005
6	980305	130414	0	0.019	1.0	0.006	0.006	0.005	0.005	0.005	0.005	0.006	0.006	0.005	0.006	0.006
7	980305	130540	0	0.019	1.0	0.013	0.014	0.015	0.029	0.380	0.184	0.070	0.033	0.028	0.020	0.079
8	980305	130705	0	0.019	1.0	0.015	0.011	0.007	0.007	0.021	0.031	0.020	0.016	0.013	0.012	0.015
9	980305	131222	0	0.019	1.0	0.007	0.008	0.009	0.010	0.009	0.006	0.007	0.007	0.007	0.008	0.008
10	980305	131447	0	0.019	1.0	0.023	0.054	0.083	0.056	0.025	0.009	0.006	0.006	0.006	0.005	0.027
11	980305	131956	0	0.019	1.0	0.005	0.004	0.005	0.004	0.005	0.004	0.004	0.005	0.004	0.004	0.004
12	980305	170532	0	0.019	1.0	0.002	0.004	0.004	0.004	0.004	0.003	0.004	0.004	0.004	0.004	0.004

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	ONE	TWO	THREE	SIX SECOND READINGS FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980306	73845	0	0.019	1.0	0.007	0.010	0.031	0.010	0.007	0.006	0.006	0.006	0.006	0.006	0.010
2	980306	74005	0	0.019	1.0	0.007	0.008	0.009	0.009	0.008	0.008	0.006	0.007	0.006	0.006	0.007
3	980306	74140	0	0.019	1.0	0.008	0.007	0.009	0.008	0.007	0.007	0.009	0.009	0.006	0.006	0.008
4	980306	85403	0	0.019	1.0	0.006	0.005	0.004	0.003	0.003	0.004	0.003	0.004	0.003	0.003	0.004
5	980306	85530	0	0.019	1.0	0.004	0.003	0.004	0.012	0.003	0.003	0.004	0.003	0.004	0.004	0.004
6	980306	85655	0	0.019	1.0	0.004	0.008	0.008	0.008	0.007	0.006	0.004	0.004	0.004	0.003	0.006

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 03/10/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980310	73831	0	0.018	1.0	0.032	0.030	0.019	0.013	0.009	0.011	0.011	0.012	0.012	0.010	0.016
2	980310	74147	0	0.018	1.0	0.024	0.007	0.008	0.007	0.007	0.008	0.007	0.008	0.007	0.007	0.009
3	980310	74327	0	0.018	1.0	0.009	0.009	0.007	0.008	0.008	0.009	0.008	0.007	0.008	0.007	0.008
4	980310	83610	0	0.018	1.0	0.008	0.009	0.010	0.007	0.009	0.008	0.006	0.006	0.016	0.009	0.009
5	980310	83837	0	0.018	1.0	0.006	0.005	0.006	0.006	0.006	0.006	0.004	0.005	0.005	0.004	0.005
6	980310	84015	0	0.018	1.0	0.005	0.005	0.004	0.005	0.006	0.005	0.004	0.005	0.005	0.004	0.005
7	980310	102525	0	0.018	1.0	0.009	0.007	0.006	0.007	0.006	0.006	0.009	0.005	0.005	0.008	0.007
8	980310	102734	0	0.018	1.0	0.007	0.005	0.006	0.005	0.005	0.005	0.006	0.006	0.005	0.005	0.006
9	980310	102912	0	0.018	1.0	0.005	0.005	0.004	0.005	0.005	0.004	0.005	0.005	0.004	0.005	0.005
10	980310	150335	0	0.018	1.0	0.009	0.010	0.011	0.013	0.007	0.008	0.020	0.011	0.007	0.006	0.010
11	980310	150543	0	0.018	1.0	0.010	0.005	0.005	0.004	0.005	0.005	0.005	0.006	0.005	0.005	0.006
12	980310	150744	0	0.018	1.0	0.006	0.005	0.005	0.005	0.005	0.005	0.006	0.005	0.005	0.005	0.005

Treatment area

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980311	71527	0	0.018	1.0	0.007	0.009	0.005	0.004	0.004	0.006	0.007	0.005	0.004	0.005	0.006
2	980311	71717	0	0.018	1.0	0.003	0.003	0.004	0.003	0.003	0.003	0.004	0.003	0.003	0.004	0.003
3	980311	93145	0	0.018	1.0	0.005	0.007	0.006	0.008	0.006	0.004	0.004	0.005	0.004	0.004	0.005
4	980311	93419	0	0.018	1.0	0.006	0.004	0.004	0.003	0.004	0.004	0.003	0.004	0.004	0.003	0.004
5	980311	104507	0	0.018	1.0	0.004	0.003	0.002	0.003	0.004	0.006	0.007	0.005	0.003	0.004	0.004
6	980311	104724	0	0.018	1.0	0.003	0.002	0.002	0.003	0.002	0.003	0.003	0.002	0.002	0.003	0.003
7	980311	125735	0	0.018	1.0	0.005	0.005	0.002	0.005	0.005	0.004	0.007	0.005	0.006	0.007	0.005
8	980311	130003	0	0.018	1.0	0.003	0.003	0.002	0.002	0.092	0.002	0.003	0.002	0.003	0.005	0.012
9	980311	153947	0	0.018	1.0	0.001	0.002	0.001	0.001	0.002	0.001	0.002	0.002	0.001	0.002	0.002
10	980311	154250	0	0.018	1.0	0.012	0.012	0.012	0.012	0.015	0.016	0.012	0.011	0.012	0.013	0.013

SEVENSON ENVIRONME SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980312	72855	0	0.028	1.0	0.008	0.006	0.005	0.006	0.005	0.007	0.005	0.004	0.004	0.003	0.005
2	980312	73303	0	0.028	1.0	0.004	0.002	0.003	0.003	0.002	0.003	0.003	0.002	0.003	0.003	0.003
3	980312	85210	0	0.028	1.0	0.007	0.008	0.006	0.004	0.003	0.003	0.004	0.003	0.004	0.003	0.005
4	980312	85427	0	0.028	1.0	0.006	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
5	980312	100633	0	0.028	1.0	0.005	0.005	0.009	0.006	0.011	0.004	0.002	0.004	0.003	0.004	0.005
6	980312	100745	0	0.028	1.0	0.004	0.007	0.005	0.005	0.004	0.003	0.003	0.002	0.002	0.003	0.004
7	980312	131455	0	0.028	1.0	0.019	0.017	0.010	0.010	0.013	0.012	0.009	0.007	0.007	0.005	0.011
8	980312	131656	0	0.028	1.0	0.002	0.004	0.003	0.003	0.003	0.002	0.002	0.003	0.003	0.002	0.003
9	980312	145728	0	0.028	1.0	0.009	0.009	0.123	0.394	0.061	0.033	0.069	0.041	0.022	0.013	0.077
10	980312	150105	0	0.028	1.0	0.004	0.002	0.002	0.002	0.001	0.002	0.003	0.002	0.002	0.003	0.002

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980313	72652	0	0.028	1.0	0.008	0.007	0.004	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.005
2	980313	73025	0	0.028	1.0	0.003	0.002	0.002	0.003	0.002	0.003	0.002	0.002	0.002	0.002	0.002
3	980313	100353	0	0.028	1.0	0.007	0.006	0.007	0.005	0.004	0.007	0.032	0.022	0.012	0.007	0.011
4	980313	100627	0	0.028	1.0	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.003	0.002	0.003	0.002
5	980313	130540	0	0.028	1.0	0.004	0.003	0.005	0.003	0.003	0.003	0.003	0.008	0.007	0.009	0.005
6	980313	130736	0	0.028	1.0	0.002	0.003	0.003	0.002	0.002	0.003	0.002	0.003	0.002	0.002	0.002
7	980313	150350	0	0.028	1.0	0.007	0.005	0.006	0.004	0.003	0.005	0.004	0.005	0.006	0.003	0.005
8	980313	150551	0	0.028	1.0	0.006	0.003	0.002	0.003	0.002	0.003	0.003	0.003	0.002	0.002	0.003

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980317	73722	0	0.029	1.0	0.008	0.007	0.006	0.007	0.007	0.006	0.007	0.006	0.006	0.007	0.007
2	980317	74206	0	0.029	1.0	0.007	0.006	0.006	0.007	0.006	0.006	0.007	0.006	0.007	0.007	0.007
3	980317	93301	0	0.029	1.0	0.006	0.005	0.005	0.004	0.005	0.003	0.005	0.004	0.005	0.005	0.005
4	980317	93614	0	0.029	1.0	0.007	0.006	0.008	0.007	0.007	0.006	0.005	0.005	0.008	0.018	0.008
5	980317	135156	0	0.029	1.0	0.005	0.003	0.005	0.004	0.003	0.003	0.003	0.004	0.004	0.003	0.004
6	980317	135915	0	0.029	1.0	0.003	0.004	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
7	980317	160918	0	0.029	1.0	0.010	0.006	0.008	0.006	0.005	0.006	0.005	0.006	0.007	0.008	0.007
8	980317	161040	0	0.029	1.0	0.066	0.064	0.068	0.061	0.063	0.070	0.070	0.073	0.049	0.027	0.061
9	980317	161156	0	0.029	1.0	0.010	0.010	0.022	0.022	0.023	0.012	0.006	0.005	0.004	0.004	0.012
10	980317	161309	0	0.029	1.0	0.004	0.004	0.003	0.003	0.004	0.003	0.004	0.003	0.031	0.023	0.008
11	980317	161424	0	0.029	1.0	0.005	0.004	0.006	0.005	0.005	0.006	0.005	0.004	0.004	0.004	0.005
12	980317	161626	0	0.029	1.0	0.005	0.005	0.005	0.005	0.005	0.004	0.003	0.003	0.004	0.004	0.004
13	980317	161740	0	0.029	1.0	0.007	0.008	0.025	0.030	0.019	0.011	0.036	0.037	0.028	0.020	0.022
14	980317	161850	0	0.029	1.0	0.036	0.037	0.024	0.013	0.012	0.017	0.012	0.006	0.006	0.006	0.017
15	980317	162323	0	0.029	1.0	0.022	0.022	0.024	0.054	0.110	0.062	0.024	0.033	0.056	0.087	0.049

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980318	72416	0	0.028	1.0	0.009	0.006	0.005	0.006	0.005	0.004	0.005	0.005	0.004	0.005	0.005
2	980318	72808	0	0.028	1.0	0.007	0.005	0.005	0.005	0.005	0.005	0.004	0.006	0.005	0.004	0.005
3	980318	94112	0	0.028	1.0	0.095	0.045	0.018	0.016	0.017	0.015	0.014	0.011	0.009	0.024	0.026
4	980318	94220	0	0.028	1.0	0.041	0.026	0.025	0.035	0.032	0.015	0.019	0.047	0.030	0.036	0.031
5	980318	94445	0	0.028	1.0	0.006	0.005	0.005	0.005	0.005	0.006	0.005	0.005	0.005	0.006	0.005

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980323	72300	0	0.028	1.0	0.005	0.003	0.004	0.003	0.003	0.003	0.001	0.008	0.003	0.003	0.004
2	980323	72642	0	0.028	1.0	0.002	0.002	0.002	0.002	0.003	0.002	0.002	0.002	0.002	0.003	0.002
3	980323	94835	0	0.028	1.0	0.011	0.038	0.024	0.009	0.004	0.003	0.004	0.003	0.003	0.003	0.010
4	980323	95538	0	0.028	1.0	0.007	0.003	0.002	0.003	0.002	0.004	0.003	0.002	0.003	0.002	0.003
5	980323	123916	0	0.028	1.0	0.004	0.004	0.003	0.004	0.007	0.005	0.006	0.005	0.005	0.005	0.005
6	980323	124019	0	0.028	1.0	0.005	0.005	0.005	0.004	0.007	0.005	0.007	0.006	0.008	0.005	0.006
7	980323	153418	0	0.028	1.0	0.005	0.006	0.006	0.006	0.007	0.006	0.006	0.006	0.006	0.007	0.006
8	980323	153732	0	0.028	1.0	0.009	0.012	0.012	0.014	0.012	0.014	0.011	0.017	0.018	0.016	0.014

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POINT			LOCA-	BACK-	K-				SIX SECOND		READINGS					AVERAGE
ID	DATE	TIME	TION	GROUND	VAL	ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	READING
1	980325	72839	0	0.027	1.0	0.005	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.005
2	980325	73318	0	0.027	1.0	0.004	0.005	0.004	0.004	0.005	0.005	0.004	0.005	0.005	0.004	0.005
3	980325	93906	0	0.027	1.0	0.004	0.004	0.003	0.004	0.003	0.003	0.004	0.004	0.004	0.004	0.004
4	980325	94009	0	0.027	1.0	0.004	0.003	0.005	0.003	0.004	0.004	0.004	0.002	0.005	0.004	0.004
5	980325	134139	0	0.027	1.0	0.005	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.006	0.010	0.004
6	980325	134408	0	0.027	1.0	0.002	0.002	0.002	0.003	0.002	0.003	0.002	0.003	0.003	0.002	0.002
7	980325	152303	0	0.027	1.0	0.010	0.017	0.016	0.017	0.018	0.014	0.021	0.015	0.022	0.034	0.018
8	980325	152409	0	0.027	1.0	0.026	0.020	0.022	0.013	0.014	0.013	0.015	0.016	0.014	0.016	0.017

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POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	ONE	TWO	THREE	SIX SECOND READINGS FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980326	72317	0	0.027	1.0	0.011	0.012	0.011	0.010	0.011	0.011	0.013	0.011	0.011	0.011	0.011
2	980326	72605	0	0.027	1.0	0.006	0.005	0.004	0.005	0.005	0.005	0.004	0.005	0.004	0.005	0.005
3	980326	92928	0	0.027	1.0	0.048	0.007	0.007	0.056	0.069	0.013	0.008	0.009	0.009	0.007	0.023
4	980326	93036	0	0.027	1.0	0.043	0.009	0.048	0.039	0.024	0.022	0.019	0.015	0.013	0.018	0.025
5	980326	110922	0	0.027	1.0	0.043	0.014	0.016	0.031	0.031	0.016	0.033	0.011	0.011	0.012	0.022
6	980326	111145	0	0.027	1.0	0.007	0.008	0.005	0.006	0.006	0.007	0.006	0.006	0.006	0.006	0.006

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POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980331	73339	0	0.027	1.0	0.019	0.020	0.020	0.020	0.018	0.015	0.014	0.015	0.019	0.019	0.018
2	980331	73724	0	0.027	1.0	0.012	0.012	0.011	0.010	0.011	0.011	0.010	0.010	0.011	0.010	0.011
3	980331	92335	0	0.027	1.0	0.021	0.025	0.026	0.024	0.021	0.026	0.022	0.021	0.021	0.020	0.023
4	980331	123723	0	0.027	1.0	0.025	0.020	0.023	0.029	0.025	0.021	0.018	0.018	0.019	0.021	0.022
5	980331	123943	0	0.027	1.0	0.026	0.049	0.087	0.043	0.028	0.026	0.026	0.037	0.036	0.029	0.039
6	980331	154155	0	0.027	1.0	0.020	0.029	0.030	0.025	0.022	0.022	0.024	0.027	0.026	0.021	0.025
7	980331	154447	0	0.027	1.0	0.015	0.012	0.011	0.009	0.010	0.010	0.010	0.011	0.009	0.009	0.011

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POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	ONE	TWO	THREE	SIX SECOND READINGS FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980403	100811	0	0.027	1.0	0.004	0.004	0.003	0.004	0.005	0.004	0.003	0.003	0.004	0.004	0.004
2	980403	101112	0	0.027	1.0	0.003	0.003	0.003	0.004	0.003	0.003	0.002	0.003	0.003	0.002	0.003
3	980403	123759	0	0.027	1.0	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
4	980403	123915	0	0.027	1.0	0.004	0.004	0.004	0.004	0.003	0.004	0.045	0.004	0.004	0.006	0.008

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POINT			LOCA-	BACK-	K-				SIX SECOND READINGS							AVERAGE
ID	DATE	TIME	TION	GROUND	VAL	ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	READING
1	980404	73248	0	0.027	1.0	0.003	0.003	0.004	0.004	0.003	0.003	0.002	0.003	0.004	0.003	0.003
2	980404	73739	0	0.027	1.0	0.004	0.007	0.008	0.013	0.010	0.009	0.007	0.006	0.004	0.005	0.007
3	980404	111714	0	0.027	1.0	0.004	0.005	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
4	980404	111817	0	0.027	1.0	0.004	0.004	0.003	0.002	0.003	0.004	0.004	0.002	0.003	0.004	0.003
5	980404	124923	0	0.027	1.0	0.002	0.004	0.002	0.003	0.002	0.002	0.007	0.003	0.003	0.001	0.003
6	980404	125049	0	0.027	1.0	0.003	0.004	0.002	0.002	0.001	0.002	0.004	0.002	0.006	0.012	0.004

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POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980406	62646	0	0.027	1.0	0.007	0.009	0.010	0.009	0.012	0.013	0.005	0.005	0.006	0.007	0.008
2	980406	63113	0	0.027	1.0	0.004	0.005	0.004	0.002	0.003	0.003	0.002	0.002	0.003	0.003	0.003
3	980406	83745	0	0.027	1.0	0.004	0.004	0.003	0.004	0.004	0.003	0.009	0.005	0.006	0.003	0.005
4	980406	83901	0	0.027	1.0	0.003	0.002	0.003	0.002	0.003	0.002	0.002	0.003	0.003	0.002	0.003

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POINT ID	DATE	TIME	LOCA- TION	BACK- GROUND	K- VAL	ONE	TWO	THREE	SIX SECOND READINGS FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980408	64042	0	0.027	1.0	0.002	0.003	0.003	0.002	0.002	0.003	0.002	0.002	0.002	0.002	0.002
2	980408	64528	0	0.027	1.0	0.005	0.007	0.006	0.005	0.002	0.004	0.005	0.005	0.003	0.003	0.005
3	980408	90333	0	0.027	1.0	0.003	0.003	0.002	0.003	0.002	0.003	0.003	0.002	0.003	0.002	0.003
4	980408	90506	0	0.027	1.0	0.004	0.003	0.002	0.003	0.002	0.002	0.002	0.003	0.002	0.002	0.003
5	980408	113552	0	0.027	1.0	0.006	0.004	0.002	0.007	0.013	0.011	0.013	0.009	0.043	0.016	0.012
6	980408	113703	0	0.027	1.0	0.002	0.005	0.003	0.004	0.004	0.002	0.003	0.003	0.002	0.002	0.003
7	980408	152856	0	0.027	1.0	0.015	0.024	0.025	0.027	0.029	0.035	0.026	0.030	0.030	0.030	0.027
8	980408	153124	0	0.027	1.0	0.007	0.003	0.002	0.002	0.003	0.003	0.002	0.002	0.002	0.003	0.003

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POINT ID	DATE	TIME	LOCATION	BACKGROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980414	94312	0	0.027	1.0	0.003	0.004	0.003	0.010	0.007	0.004	0.004	0.004	0.003	0.004	0.005
2	980414	94609	0	0.027	1.0	0.004	0.003	0.004	0.005	0.004	0.007	0.005	0.008	0.008	0.005	0.005
3	980414	123232	0	0.027	1.0	0.011	0.006	0.003	0.003	0.004	0.004	0.003	0.004	0.003	0.004	0.005
4	980414	123348	0	0.027	1.0	0.004	0.007	0.005	0.005	0.003	0.003	0.008	0.004	0.004	0.003	0.005
5	980414	161640	0	0.027	1.0	0.007	0.007	0.005	0.004	0.004	0.003	0.004	0.004	0.003	0.003	0.004
6	980414	162014	0	0.027	1.0	0.003	0.005	0.008	0.016	0.003	0.004	0.003	0.005	0.004	0.003	0.005

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POINT ID	DATE	TIME	LOCATION	BACKGROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980418	71653	0	0.027	1.0	0.009	0.007	0.009	0.007	0.006	0.006	0.007	0.006	0.005	0.006	0.007
2	980418	72126	0	0.027	1.0	0.006	0.008	0.008	0.006	0.007	0.008	0.011	0.013	0.011	0.008	0.009
3	980418	103716	0	0.027	1.0	0.011	0.006	0.005	0.005	0.005	0.007	0.007	0.007	0.005	0.005	0.006
4	980418	103819	0	0.027	1.0	0.006	0.010	0.008	0.005	0.005	0.006	0.006	0.004	0.008	0.008	0.007
5	980418	122859	0	0.027	1.0	0.006	0.004	0.005	0.005	0.005	0.005	0.008	0.008	0.007	0.008	0.006
6	980418	123003	0	0.027	1.0	0.008	0.006	0.005	0.006	0.005	0.006	0.007	0.005	0.005	0.005	0.006

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POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980421	73219	0	0.027	1.0	0.007	0.006	0.005	0.004	0.005	0.006	0.007	0.008	0.007	0.009	0.006
2	980421	73804	0	0.027	1.0	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.003	0.003
3	980421	101413	0	0.027	1.0	0.012	0.009	0.009	0.011	0.015	0.016	0.009	0.006	0.005	0.006	0.010
4	980421	101517	0	0.027	1.0	0.006	0.008	0.005	0.008	0.012	0.014	0.008	0.007	0.005	0.006	0.008
5	980421	123247	0	0.027	1.0	0.005	0.005	0.005	0.003	0.005	0.004	0.003	0.004	0.004	0.003	0.004
6	980421	123349	0	0.027	1.0	0.004	0.004	0.003	0.005	0.005	0.004	0.005	0.004	0.004	0.005	0.004

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POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	ONE	TWO	THREE	SIX SECOND READINGS FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980422	72121	0	0.027	1.0	0.014	0.013	0.010	0.008	0.008	0.009	0.009	0.007	0.007	0.007	0.009
2	980422	72600	0	0.027	1.0	0.007	0.007	0.009	0.007	0.008	0.007	0.007	0.008	0.007	0.006	0.007
3	980422	94619	0	0.027	1.0	0.007	0.005	0.005	0.007	0.007	0.005	0.007	0.006	0.007	0.005	0.006
4	980422	94730	0	0.027	1.0	0.005	0.006	0.006	0.005	0.005	0.010	0.010	0.007	0.006	0.006	0.007
5	980422	123436	0	0.027	1.0	0.006	0.005	0.005	0.008	0.007	0.007	0.007	0.007	0.006	0.006	0.006
6	980422	123546	0	0.027	1.0	0.005	0.004	0.005	0.005	0.010	0.006	0.010	0.007	0.007	0.009	0.007
7	980422	144614	0	0.027	1.0	0.007	0.005	0.005	0.004	0.004	0.005	0.004	0.005	0.004	0.004	0.005
8	980422	144719	0	0.027	1.0	0.004	0.004	0.004	0.004	0.005	0.004	0.004	0.004	0.004	0.004	0.004

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						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980428	92546	0	0.027	1.0	0.004	0.004	0.003	0.013	0.006	0.003	0.002	0.002	0.002	0.003	0.004
2	980428	92713	0	0.027	1.0	0.002	0.002	0.002	0.002	0.002	0.004	0.004	0.006	0.004	0.007	0.004
3	980428	123553	0	0.027	1.0	0.005	0.003	0.003	0.003	0.008	0.008	0.005	0.002	0.002	0.002	0.004
4	980428	123656	0	0.027	1.0	0.003	0.008	0.011	0.280	0.144	0.012	0.004	0.003	0.002	0.002	0.047
5	980428	161415	0	0.027	1.0	0.003	0.003	0.002	0.003	0.002	0.002	0.003	0.002	0.004	0.002	0.003
6	980428	161840	0	0.027	1.0	0.003	0.002	0.005	0.009	0.004	0.004	0.005	0.006	0.005	0.004	0.005

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						SIX SECOND READINGS										
POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980429	72012	0	0.027	1.0	0.007	0.013	0.006	0.005	0.004	0.005	0.005	0.003	0.003	0.004	0.006
2	980429	72343	0	0.027	1.0	0.003	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.005	0.003
3	980429	93042	0	0.027	1.0	0.012	0.011	0.008	0.006	0.008	0.009	0.008	0.010	0.014	0.018	0.010
4	980429	93148	0	0.027	1.0	0.017	0.018	0.033	0.050	0.050	0.023	0.011	0.014	0.015	0.015	0.025
5	980429	123514	0	0.027	1.0	0.080	0.031	0.307	0.314	0.119	0.066	0.026	0.037	0.008	0.043	0.103
6	980429	123623	0	0.027	1.0	0.071	0.202	0.150	0.066	0.014	0.008	0.010	0.013	0.013	0.015	0.056
7	980429	150916	0	0.027	1.0	0.011	0.011	0.009	0.006	0.006	0.018	0.014	0.088	0.019	0.012	0.019
8	980429	151133	0	0.027	1.0	0.008	0.006	0.003	0.006	0.004	0.003	0.003	0.004	0.003	0.003	0.004

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						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980430	72338	0	0.027	1.0	0.008	0.010	0.010	0.010	0.008	0.010	0.012	0.011	0.011	0.015	0.011
2	980430	72743	0	0.027	1.0	0.007	0.008	0.008	0.008	0.008	0.007	0.007	0.008	0.008	0.007	0.008
3	980430	100158	0	0.027	1.0	0.014	0.018	0.019	0.013	0.032	0.014	0.011	0.012	0.014	0.016	0.016
4	980430	100303	0	0.027	1.0	0.018	0.012	0.012	0.012	0.010	0.011	0.022	0.028	0.020	0.015	0.016
5	980430	123245	0	0.027	1.0	0.012	0.011	0.011	0.011	0.014	0.011	0.011	0.012	0.011	0.012	0.012
6	980430	123348	0	0.027	1.0	0.014	0.011	0.011	0.011	0.011	0.011	0.010	0.011	0.011	0.012	0.011
7	980430	145416	0	0.027	1.0	0.011	0.010	0.010	0.011	0.011	0.011	0.012	0.011	0.010	0.012	0.011
8	980430	145527	0	0.027	1.0	0.012	0.010	0.010	0.009	0.012	0.011	0.014	0.014	0.012	0.011	0.012
9	980430	162945	0	0.027	1.0	0.012	0.014	0.019	0.020	0.021	0.017	0.017	0.015	0.015	0.014	0.016
10	980430	163050	0	0.027	1.0	0.011	0.013	0.014	0.016	0.014	0.016	0.016	0.015	0.014	0.018	0.015

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INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980508	72300	0	0.027	1.0	0.004	0.004	0.002	0.002	0.002	0.001	0.003	0.001	0.002	0.001	0.002
2	980508	72741	0	0.027	1.0	0.005	0.002	0.001	0.002	0.001	0.001	0.002	0.002	0.002	0.001	0.002
3	980508	90227	0	0.027	1.0	0.004	0.004	0.008	0.002	0.002	0.002	0.006	0.004	0.002	0.002	0.004
4	980508	90336	0	0.027	1.0	0.002	0.002	0.002	0.002	0.003	0.001	0.003	0.001	0.002	0.002	0.002
5	980508	110433	0	0.027	1.0	0.005	0.007	0.004	0.007	0.004	0.005	0.032	0.004	0.004	0.004	0.008
6	980508	110541	0	0.027	1.0	0.003	0.004	0.003	0.006	0.003	0.004	0.003	0.003	0.003	0.002	0.003
7	980508	133238	0	0.027	1.0	0.038	0.005	0.005	0.005	0.004	0.006	0.004	0.004	0.004	0.004	0.008
8	980508	133348	0	0.027	1.0	0.004	0.004	0.004	0.004	0.005	0.003	0.004	0.005	0.004	0.004	0.004

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT			LOCA-	BACK-	K-				SIX SECOND		READINGS					AVERAGE
ID	DATE	TIME	TION	GROUND	VAL	ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	READING
1	980513	71340	0	0.027	1.0	0.006	0.007	0.005	0.006	0.007	0.008	0.014	0.010	0.014	0.008	0.009
2	980513	71658	0	0.027	1.0	0.010	0.006	0.007	0.007	0.008	0.009	0.007	0.006	0.006	0.008	0.007
3	980513	95222	0	0.027	1.0	0.009	0.007	0.007	0.006	0.006	0.006	0.007	0.017	0.007	0.005	0.008
4	980513	95328	0	0.027	1.0	0.005	0.006	0.006	0.005	0.005	0.005	0.005	0.005	0.006	0.004	0.005
5	980513	112605	0	0.027	1.0	0.006	0.009	0.008	0.006	0.006	0.005	0.006	0.005	0.005	0.005	0.006
6	980513	112740	0	0.027	1.0	0.007	0.006	0.006	0.005	0.006	0.005	0.005	0.004	0.006	0.009	0.006
7	980513	155030	0	0.027	1.0	0.007	0.007	0.006	0.005	0.007	0.005	0.005	0.006	0.012	0.014	0.007
8	980513	155445	0	0.027	1.0	0.006	0.006	0.008	0.006	0.006	0.007	0.007	0.009	0.010	0.012	0.008

SEVENSON ENVIRONMENTAL SERVICES
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PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980514	72455	0	0.027	1.0	0.006	0.006	0.005	0.005	0.005	0.005	0.006	0.004	0.005	0.005	0.005
2	980514	72838	0	0.027	1.0	0.008	0.009	0.007	0.006	0.008	0.006	0.007	0.009	0.008	0.006	0.007
3	980514	93609	0	0.027	1.0	0.012	0.011	0.009	0.009	0.009	0.010	0.009	0.009	0.011	0.011	0.010
4	980514	93712	0	0.027	1.0	0.008	0.013	0.011	0.012	0.009	0.008	0.007	0.005	0.007	0.006	0.009
5	980514	141909	0	0.027	1.0	0.013	0.012	0.012	0.009	0.009	0.015	0.011	0.012	0.011	0.007	0.011
6	980514	142012	0	0.027	1.0	0.006	0.011	0.012	0.009	0.010	0.013	0.010	0.007	0.008	0.008	0.009
7	980514	154338	0	0.027	1.0	0.006	0.006	0.005	0.014	0.011	0.010	0.017	0.018	0.008	0.005	0.010
8	980514	154714	0	0.027	1.0	0.010	0.010	0.011	0.009	0.008	0.010	0.009	0.008	0.007	0.007	0.009

SEVENSON ENVIRONMENTAL SERVICES
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INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980515	71926	0	0.027	1.0	0.012	0.029	0.020	0.015	0.009	0.008	0.014	0.008	0.012	0.012	0.014
2	980515	72237	0	0.027	1.0	0.007	0.008	0.004	0.004	0.004	0.004	0.003	0.003	0.003	0.003	0.004
3	980515	90453	0	0.027	1.0	0.012	0.018	0.016	0.017	0.020	0.028	0.026	0.028	0.012	0.009	0.019
4	980515	90602	0	0.027	1.0	0.011	0.007	0.008	0.015	0.021	0.014	0.022	0.017	0.019	0.012	0.015
5	980515	134728	0	0.027	1.0	0.013	0.010	0.011	0.011	0.010	0.010	0.011	0.010	0.008	0.009	0.010
6	980515	134940	0	0.027	1.0	0.007	0.008	0.009	0.012	0.021	0.016	0.013	0.008	0.007	0.009	0.011
7	980515	153525	0	0.027	1.0	0.012	0.008	0.006	0.010	0.012	0.012	0.013	0.015	0.012	0.010	0.011
8	980515	153941	0	0.027	1.0	0.009	0.008	0.010	0.008	0.006	0.006	0.006	0.005	0.006	0.004	0.007

SEVENSON ENVIRONMENTAL SERVICES
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PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980516	71915	0	0.027	1.0	0.011	0.014	0.009	0.009	0.010	0.014	0.011	0.013	0.011	0.011	0.011
2	980516	72338	0	0.027	1.0	0.009	0.007	0.006	0.008	0.008	0.006	0.006	0.006	0.007	0.007	0.007
3	980516	94318	0	0.027	1.0	0.023	0.030	0.016	0.018	0.017	0.016	0.015	0.014	0.017	0.016	0.018
4	980516	94424	0	0.027	1.0	0.014	0.013	0.016	0.014	0.015	0.015	0.014	0.014	0.017	0.016	0.015
5	980516	115805	0	0.027	1.0	0.016	0.017	0.011	0.012	0.009	0.010	0.009	0.009	0.008	0.009	0.011
6	980516	115913	0	0.027	1.0	0.011	0.011	0.010	0.009	0.012	0.012	0.013	0.015	0.020	0.032	0.015
7	980516	142652	0	0.027	1.0	0.013	0.016	0.020	0.022	0.024	0.025	0.023	0.020	0.023	0.031	0.022
8	980516	143026	0	0.027	1.0	0.012	0.012	0.014	0.009	0.007	0.018	0.049	0.029	0.012	0.009	0.017

SEVENSON ENVIRONMENTAL SERVICES
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POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980518	71113	0	0.027	1.0	0.017	0.022	0.015	0.014	0.009	0.011	0.009	0.010	0.011	0.011	0.013
2	980518	71414	0	0.027	1.0	0.008	0.008	0.009	0.009	0.009	0.008	0.009	0.008	0.010	0.010	0.009
3	980518	102324	0	0.027	1.0	0.014	0.012	0.011	0.012	0.012	0.011	0.018	0.013	0.012	0.012	0.013
4	980518	102427	0	0.027	1.0	0.014	0.014	0.014	0.015	0.024	0.017	0.015	0.012	0.012	0.013	0.015
5	980518	133632	0	0.027	1.0	0.020	0.017	0.019	0.022	0.023	0.018	0.021	0.017	0.014	0.019	0.019
6	980518	133741	0	0.027	1.0	0.016	0.015	0.014	0.014	0.034	0.036	0.037	0.031	0.027	0.032	0.026
7	980518	154015	0	0.027	1.0	0.019	0.021	0.025	0.021	0.020	0.018	0.023	0.037	0.035	0.021	0.024
8	980518	154337	0	0.027	1.0	0.014	0.011	0.013	0.036	0.019	0.010	0.008	0.010	0.010	0.009	0.014

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POINT			LOCA-	BACK-	K-				SIX SECOND		READINGS					AVERAGE
ID	DATE	TIME	TION	GROUND	VAL	ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	READING
1	980519	71507	0	0.027	1.0	0.008	0.007	0.013	0.041	0.026	0.019	0.016	0.016	0.015	0.016	0.018
2	980519	71947	0	0.027	1.0	0.008	0.007	0.007	0.006	0.006	0.007	0.007	0.006	0.008	0.007	0.007
3	980519	93720	0	0.027	1.0	0.014	0.007	0.007	0.006	0.007	0.008	0.008	0.007	0.007	0.009	0.008
4	980519	93834	0	0.027	1.0	0.083	0.061	0.017	0.007	0.007	0.006	0.005	0.008	0.007	0.006	0.021
5	980519	123715	0	0.027	1.0	0.007	0.008	0.007	0.003	0.005	0.003	0.003	0.003	0.006	0.037	0.008
6	980519	123823	0	0.027	1.0	0.014	0.009	0.010	0.008	0.005	0.007	0.004	0.003	0.003	0.003	0.007
7	980519	152536	0	0.027	1.0	0.027	0.025	0.020	0.015	0.017	0.017	0.089	0.032	0.021	0.020	0.028
8	980519	152904	0	0.027	1.0	0.041	0.004	0.011	0.019	0.032	0.022	0.026	0.043	0.029	0.016	0.024

SEVENSON ENVIRONME[illegible]AL SERVICES
CAPE COD - MMR
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INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980520	72901	0	0.028	1.0	0.010	0.010	0.010	0.009	0.011	0.009	0.007	0.011	0.006	0.005	0.009
2	980520	73322	0	0.028	1.0	0.003	0.005	0.004	0.003	0.002	0.002	0.001	0.002	0.002	0.003	0.003
3	980520	91914	0	0.028	1.0	0.007	0.006	0.010	0.013	0.042	0.040	0.010	0.005	0.026	0.035	0.019
4	980520	92159	0	0.028	1.0	0.006	0.007	0.012	0.007	0.005	0.011	0.008	0.010	0.008	0.004	0.008
5	980520	111236	0	0.028	1.0	0.010	0.010	0.009	0.015	0.015	0.009	0.010	0.008	0.008	0.008	0.010
6	980520	111351	0	0.028	1.0	0.018	0.007	0.005	0.010	0.008	0.006	0.009	0.011	0.011	0.008	0.009
7	980520	123647	0	0.028	1.0	0.003	0.003	0.004	0.004	0.003	0.008	0.004	0.004	0.005	0.005	0.004
8	980520	123821	0	0.028	1.0	0.002	0.003	0.022	0.025	0.011	0.018	0.010	0.005	0.003	0.003	0.010
9	980520	152909	0	0.028	1.0	0.012	0.011	0.006	0.003	0.011	0.192	0.099	0.481	0.150	0.056	0.102
10	980520	153315	0	0.028	1.0	0.008	0.002	0.010	0.031	0.002	0.002	-0.000	0.003	0.001	0.002	0.006

SEVENSON ENVIRONMENTAL SERVICES
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POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980521	71051	0	0.028	1.0	0.014	0.018	0.025	0.013	0.009	0.017	0.009	0.013	0.011	0.019	0.015
2	980521	71154	0	0.028	1.0	0.021	0.017	0.011	0.013	0.011	0.010	0.008	0.009	0.007	0.009	0.012
3	980521	94205	0	0.028	1.0	0.015	0.027	0.025	0.029	0.029	0.019	0.014	0.021	0.033	0.082	0.029
4	980521	94329	0	0.028	1.0	0.024	0.013	0.012	0.011	0.009	0.011	0.015	0.023	0.020	0.018	0.016
5	980521	123331	0	0.028	1.0	0.010	0.010	0.010	0.010	0.021	0.013	0.060	0.071	0.043	0.014	0.026
6	980521	123438	0	0.028	1.0	0.007	0.009	0.008	0.009	0.011	0.034	0.010	0.008	0.006	0.008	0.011

SEVENSON ENVIRONM AL SERVICES
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DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
						SIX SECOND READINGS										
1	980602	72937	0	0.010	1.0	0.005	0.008	0.010	0.003	0.004	0.006	0.003	0.004	0.003	0.004	0.005
2	980602	73336	0	0.010	1.0	0.003	0.003	0.003	0.003	0.004	0.003	0.003	0.005	0.003	0.003	0.003
3	980602	92906	0	0.010	1.0	0.005	0.005	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
4	980602	93009	0	0.010	1.0	0.005	0.015	0.005	0.004	0.005	0.003	0.004	0.004	0.004	0.005	0.005
5	980602	123700	0	0.010	1.0	0.005	0.006	0.012	0.014	0.005	0.006	0.012	0.058	0.041	0.030	0.019
6	980602	123807	0	0.010	1.0	0.015	0.005	0.006	0.012	0.012	0.014	0.011	0.014	0.009	0.016	0.011
7	980602	152905	0	0.010	1.0	0.015	0.009	0.009	0.008	0.009	0.011	0.013	0.014	0.008	0.009	0.011
8	980602	153422	0	0.010	1.0	0.009	0.019	0.013	0.026	0.011	0.021	0.011	0.004	0.028	0.054	0.020

SEVENSON ENVIRONMENTAL SERVICES
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POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980604	71741	0	0.028	1.0	0.004	0.002	0.002	0.002	0.004	0.002	-0.000	0.002	0.002	0.002	0.002
2	980604	72107	0	0.028	1.0	0.004	0.001	0.002	0.001	0.002	0.002	0.003	0.003	0.002	0.001	0.002
3	980604	94536	0	0.028	1.0	0.008	0.005	0.005	0.007	0.007	0.015	0.009	0.010	0.003	0.002	0.007
4	980604	94656	0	0.028	1.0	0.014	0.008	0.009	0.006	0.005	0.003	0.002	0.004	0.006	0.007	0.006
5	980604	145025	0	0.028	1.0	0.006	0.006	0.009	0.004	0.005	0.004	0.010	0.006	0.003	0.003	0.006
6	980604	145138	0	0.028	1.0	0.001	0.010	0.056	0.121	0.016	0.005	0.003	0.003	0.003	0.002	0.022

SEVENSON ENVIRONM[illegible]L SERVICES
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POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
						SIX SECOND READINGS										
1	980605	75849	0	0.028	1.0	0.023	0.037	0.014	0.011	0.006	0.006	0.002	0.002	0.006	0.018	0.013
2	980605	80127	0	0.028	1.0	0.001	0.006	0.010	0.005	0.002	0.001	0.002	0.002	0.002	0.044	0.008
3	980605	104358	0	0.028	1.0	0.010	0.045	0.015	0.030	0.021	0.023	0.003	0.003	0.002	0.003	0.016
4	980605	104501	0	0.028	1.0	0.001	-0.000	0.002	0.006	0.008	0.004	0.005	0.007	0.050	0.009	0.009
5	980605	130308	0	0.028	1.0	0.010	0.002	0.005	0.025	0.072	0.030	0.023	0.157	0.021	0.046	0.039
6	980605	130420	0	0.028	1.0	0.053	0.062	0.131	0.050	0.029	0.047	0.053	0.164	0.229	0.132	0.095
7	980605	154635	0	0.028	1.0	0.017	0.014	0.006	0.002	-0.000	0.001	-0.000	0.002	0.001	0.004	0.005
8	980605	154901	0	0.028	1.0	0.029	0.011	0.005	0.005	0.006	0.013	0.006	0.026	0.003	-0.000	0.010

SEVENSON ENVIRONMENTAL SERVICES
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PARTICULATE MONITORING

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DATE: 06/16/98

POINT			LOCA-	BACK-	K-				SIX SECOND		READINGS					AVERAGE
ID	DATE	TIME	TION	GROUND	VAL	ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	READING
1	980609	72104	0	0.028	1.0	0.002	0.001	0.001	0.001	0.001	0.002	0.009	0.015	0.007	0.003	0.004
2	980609	72527	0	0.028	1.0	0.006	0.003	0.002	-0.000	0.001	-0.000	0.001	0.001	0.006	0.001	0.002
3	980609	93555	0	0.028	1.0	0.004	0.003	0.001	0.002	0.002	0.001	0.001	0.001	0.002	0.001	0.002
4	980609	93702	0	0.028	1.0	0.010	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.002
5	980609	123755	0	0.028	1.0	0.003	0.003	0.003	0.004	0.002	0.003	0.001	0.001	0.003	0.001	0.002
6	980609	123859	0	0.028	1.0	0.001	0.002	-0.000	0.001	-0.000	0.001	0.001	-0.000	0.001	0.001	0.001
7	980609	152452	0	0.028	1.0	0.019	0.014	0.016	0.015	0.012	0.008	0.005	0.004	0.003	0.004	0.010
8	980609	152941	0	0.028	1.0	0.021	0.011	0.003	0.001	0.001	0.016	0.007	0.004	0.004	0.004	0.007

BACKGROUND AND INDIVIDUAL RANGES

SEVENSON ENVIR ENTAL SERVICES
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INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	ONE	TWO	THREE	SIX SECOND READINGS FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980227	91928	0	0.018	1.0	0.016	0.006	0.006	0.006	0.008	0.006	0.005	0.005	0.006	0.005	0.007
2	980227	92257	0	0.018	1.0	0.012	0.009	0.009	0.010	0.010	0.011	0.012	0.010	0.011	0.011	0.011
3	980227	92445	0	0.018	1.0	0.014	0.011	0.008	0.006	0.007	0.006	0.005	0.006	0.005	0.006	0.007
4	980227	93020	0	0.018	1.0	0.008	0.007	0.006	0.007	0.007	0.011	0.012	0.011	0.011	0.006	0.009

Background data.

SEVENSON ENVIRONMENTAL SERVICES
CAPE CODE - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT			LOCA-	BACK-	K-				SIX SECOND		READINGS					AVERAGE
ID	DATE	TIME	TION	GROUND	VAL	ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	READING
1	980302	81717	0	0.021	1.0	0.011	0.015	0.009	0.016	0.013	0.009	0.009	0.007	0.007	0.007	0.010
2	980302	90514	0	0.021	1.0	0.023	0.024	0.020	0.018	0.011	0.016	0.020	0.011	0.008	0.008	0.016
3	980302	95525	0	0.021	1.0	0.008	0.009	0.012	0.011	0.017	0.012	0.010	0.008	0.009	0.008	0.010
4	980302	104948	0	0.021	1.0	0.008	0.009	0.009	0.009	0.008	0.009	0.010	0.009	0.009	0.009	0.009
5	980302	112812	0	0.021	1.0	0.007	0.009	0.007	0.008	0.007	0.007	0.008	0.007	0.007	0.008	0.008
6	980302	121909	0	0.021	1.0	0.015	0.010	0.008	0.008	0.009	0.010	0.012	0.010	0.009	0.009	0.010
7	980302	131816	0	0.021	1.0	0.005	0.004	0.004	0.005	0.004	0.004	0.004	0.005	0.004	0.004	0.004
8	980302	144422	0	0.021	1.0	0.005	0.005	0.005	0.005	0.006	0.005	0.005	0.005	0.005	0.005	0.005
9	980302	155344	0	0.021	1.0	0.010	0.006	0.006	0.005	0.004	0.005	0.005	0.007	0.005	0.005	0.006
10	980302	163835	0	0.021	1.0	0.009	0.010	0.013	0.017	0.013	0.009	0.025	0.043	0.055	0.045	0.024

Range 6

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 521366

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980304	83020	0	0.011	1.0	0.011	0.006	0.004	0.005	0.005	0.005	0.004	0.005	0.005	0.004	0.005
2	980304	85730	0	0.011	1.0	0.007	0.012	0.010	0.006	0.006	0.006	0.006	0.005	0.005	0.005	0.007
3	980304	94015	0	0.011	1.0	0.006	0.004	0.004	0.004	0.005	0.015	0.017	0.010	0.018	0.017	0.010
4	980304	100059	0	0.011	1.0	0.006	0.004	0.004	0.004	0.004	0.004	0.004	0.006	0.009	0.006	0.005
5	980304	103009	0	0.011	1.0	0.006	0.010	0.005	0.003	0.004	0.004	0.004	0.003	0.004	0.003	0.005

Range G

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 521366

DATE: 06/16/98

POINT			LOCA-	BACK-	K-				SIX SECOND		READINGS					AVERAGE
ID	DATE	TIME	TION	GROUND	VAL	ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	READING
1	980305	75349	0	0.011	1.0	0.007	0.005	0.006	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
2	980305	83901	0	0.011	1.0	0.008	0.009	0.006	0.006	0.006	0.006	0.005	0.006	0.014	0.012	0.008
3	980305	93804	0	0.011	1.0	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.004	0.003
4	980305	105416	0	0.011	1.0	0.002	0.003	0.002	0.003	0.002	0.003	0.004	0.003	0.003	0.003	0.003

Range G

SEVENSON ENVIRONM[illegible]L SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 521366

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980306	80028	0	0.011	1.0	0.025	0.004	0.004	0.004	0.006	0.004	0.004	0.004	0.004	0.005	0.006
2	980306	80214	0	0.011	1.0	0.004	0.004	0.005	0.004	0.004	0.003	0.004	0.004	0.004	0.004	0.004
3	980306	80350	0	0.011	1.0	0.016	0.010	0.023	0.005	0.004	0.004	0.004	0.004	0.005	0.004	0.008
4	980306	80602	0	0.011	1.0	0.047	0.036	0.034	0.032	0.035	0.047	0.020	0.015	0.012	0.010	0.029
5	980306	81842	0	0.011	1.0	0.006	0.004	0.004	0.003	0.003	0.004	0.006	0.003	0.004	0.003	0.004

Range H

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 521366

DATE: 03/10/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980310	75952	0	0.011	1.0	0.027	0.014	0.014	0.005	0.004	0.006	0.005	0.009	0.006	0.005	0.010
2	980310	80519	0	0.011	1.0	0.019	0.012	0.012	0.011	0.032	0.017	0.008	0.005	0.009	0.022	0.015
3	980310	80719	0	0.011	1.0	0.021	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.003	0.004	0.006
4	980310	91518	0	0.011	1.0	0.019	0.005	0.004	0.004	0.004	0.004	0.008	0.004	0.004	0.003	0.006
5	980310	91720	0	0.011	1.0	0.026	0.003	0.005	0.003	0.004	0.003	0.003	0.004	0.007	0.004	0.006
6	980310	92253	0	0.011	1.0	0.004	0.004	0.004	0.005	0.003	0.004	0.003	0.003	0.004	0.003	0.004
7	980310	101128	0	0.011	1.0	0.012	0.005	0.003	0.003	0.004	0.003	0.003	0.004	0.008	0.004	0.005
8	980310	101325	0	0.011	1.0	0.006	0.003	0.003	0.003	0.002	0.003	0.002	0.003	0.002	0.003	0.003
9	980310	101459	0	0.011	1.0	0.003	0.004	0.003	0.003	0.003	0.003	0.002	0.004	0.002	0.003	0.003
10	980310	152901	0	0.011	1.0	0.012	0.004	0.003	0.003	0.003	0.004	0.003	0.004	0.003	0.004	0.004
11	980310	153028	0	0.011	1.0	0.076	0.010	0.008	0.011	0.031	0.023	0.013	0.005	0.014	0.008	0.020
12	980310	153256	0	0.011	1.0	0.007	0.014	0.012	0.007	0.004	0.004	0.004	0.004	0.004	0.005	0.007

Range H

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 521366

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	ONE	TWO	THREE	SIX SECOND READINGS FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980311	73829	0	0.011	1.0	0.011	0.002	0.002	0.002	0.003	0.003	0.005	0.002	0.002	0.002	0.003
2	980311	74244	0	0.011	1.0	0.048	0.010	0.022	0.006	0.006	0.050	0.011	0.005	0.021	0.012	0.019
3	980311	90651	0	0.011	1.0	0.008	0.003	0.004	0.002	0.003	0.001	0.002	0.002	0.001	0.003	0.003
4	980311	90844	0	0.011	1.0	0.005	0.002	0.002	0.003	0.004	0.003	0.026	0.003	0.003	0.002	0.005
5	980311	110546	0	0.011	1.0	0.024	0.006	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.001	0.005
6	980311	111116	0	0.011	1.0	0.014	0.002	0.002	0.002	0.002	0.003	0.001	0.002	0.002	0.002	0.003
7	980311	133039	0	0.011	1.0	0.013	0.003	0.002	0.001	0.002	0.002	0.002	0.001	0.001	0.000	0.003
8	980311	133213	0	0.011	1.0	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001
9	980311	133414	0	0.011	1.0	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.002	0.001	0.001	0.002
10	980311	150426	0	0.011	1.0	0.005	0.002	0.001	0.000	0.002	0.004	0.001	0.001	0.006	0.003	0.003
11	980311	150836	0	0.011	1.0	0.023	0.003	0.007	0.004	0.003	0.002	0.002	0.001	0.002	0.001	0.005

Range H

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 521366

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980312	75334	0	0.010	1.0	0.005	0.003	0.002	0.003	0.003	0.002	0.003	0.003	0.002	0.003	0.003
2	980312	75705	0	0.010	1.0	0.019	0.004	0.005	0.003	0.003	0.003	0.002	0.003	0.002	0.003	0.005
3	980312	94815	0	0.010	1.0	0.009	0.003	0.003	0.003	0.002	0.003	0.002	0.002	0.003	0.002	0.003
4	980312	95043	0	0.010	1.0	0.003	0.002	0.003	0.002	0.002	0.003	0.002	0.003	0.002	0.003	0.003
5	980312	115301	0	0.010	1.0	0.014	0.005	0.004	0.002	0.003	0.005	0.013	0.006	0.002	0.004	0.006
6	980312	115526	0	0.010	1.0	0.003	0.004	0.003	0.002	0.003	0.003	0.002	0.002	0.003	0.002	0.003
7	980312	133857	0	0.010	1.0	0.004	0.004	0.004	0.009	0.009	0.008	0.006	0.006	0.004	0.003	0.006
8	980312	134043	0	0.010	1.0	0.008	0.009	0.011	0.009	0.027	0.006	0.005	0.005	0.008	0.005	0.009
9	980312	151302	0	0.010	1.0	0.013	0.026	0.010	0.008	0.006	0.004	0.003	0.005	0.010	0.008	0.009
10	980312	151435	0	0.010	1.0	0.024	0.008	0.009	0.006	0.003	0.004	0.006	0.008	0.011	0.007	0.009

Range I

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 521366

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL				SIX SECOND READINGS							AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980313	75705	0	0.011	1.0	0.003	0.002	0.010	0.006	0.006	0.006	0.004	0.017	0.008	0.005	0.007
2	980313	80525	0	0.011	1.0	0.006	0.003	0.006	0.004	0.005	0.002	0.002	0.002	0.002	0.003	0.004
3	980313	94101	0	0.011	1.0	0.007	0.003	0.003	0.004	0.011	0.020	0.008	0.006	0.003	0.001	0.007
4	980313	94209	0	0.011	1.0	0.002	0.007	0.016	0.007	0.003	0.002	0.001	0.002	0.002	0.002	0.004
5	980313	110647	0	0.011	1.0	0.022	0.159	0.060	0.009	0.004	0.002	0.013	0.009	0.011	0.005	0.029
6	980313	110756	0	0.011	1.0	0.003	0.004	0.006	0.005	0.012	0.009	0.002	0.016	0.003	0.002	0.006
7	980313	132052	0	0.011	1.0	0.011	0.002	0.002	0.002	0.003	0.002	0.002	0.002	0.002	0.001	0.003
8	980313	132226	0	0.011	1.0	0.003	0.002	0.001	0.002	0.002	0.003	0.003	0.002	0.001	0.002	0.002
9	980313	152003	0	0.011	1.0	0.011	0.043	0.010	0.039	0.008	0.003	0.002	0.005	0.015	0.005	0.014
10	980313	152526	0	0.011	1.0	0.025	0.018	0.011	0.014	0.008	0.021	0.026	0.019	0.014	0.010	0.017

Range I

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 521366

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980323	74504	0	0.011	1.0	0.009	0.003	0.003	0.003	0.004	0.003	0.005	0.003	0.002	0.002	0.004
2	980323	75105	0	0.011	1.0	0.050	0.004	0.003	0.004	0.003	0.005	0.003	0.004	0.003	0.003	0.008
3	980323	101634	0	0.011	1.0	0.008	0.005	0.003	0.005	0.003	0.004	0.003	0.003	0.003	0.004	0.004
4	980323	102025	0	0.011	1.0	0.023	0.005	0.004	0.006	0.003	0.003	0.003	0.003	0.002	0.003	0.006
5	980323	125109	0	0.011	1.0	0.010	0.005	0.006	0.005	0.003	0.003	0.005	0.005	0.004	0.004	0.005
6	980323	125253	0	0.011	1.0	0.003	0.003	0.003	0.003	0.010	0.008	0.018	0.003	0.002	0.004	0.006
7	980323	151258	0	0.011	1.0	0.036	0.007	0.010	0.013	0.005	0.006	0.004	0.005	0.004	0.004	0.009
8	980323	151528	0	0.011	1.0	0.006	0.003	0.006	0.004	0.005	0.005	0.004	0.024	0.005	0.006	0.007

Range K

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 521366

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980324	80237	0	0.011	1.0	0.006	0.002	0.003	0.003	0.003	0.002	0.003	0.002	0.003	0.003	0.003
2	980324	81544	0	0.011	1.0	0.013	0.016	0.010	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.006
3	980324	103855	0	0.011	1.0	0.006	0.003	0.003	0.003	0.003	0.004	0.003	0.003	0.004	0.010	0.004
4	980324	104038	0	0.011	1.0	0.004	0.005	0.005	0.004	0.004	0.004	0.004	0.018	0.010	0.007	0.007
5	980324	124202	0	0.011	1.0	0.014	0.007	0.006	0.008	0.009	0.006	0.005	0.008	0.011	0.010	0.008
6	980324	124402	0	0.011	1.0	0.005	0.004	0.004	0.003	0.006	0.006	0.004	0.004	0.003	0.004	0.004

Range K

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 521366

DATE: 06/16/98

POINT ID	DATE	TIME	LOCATION	BACKGROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980325	75544	0	0.011	1.0	0.006	0.003	0.003	0.004	0.006	0.004	0.005	0.003	0.004	0.003	0.004
2	980325	80710	0	0.011	1.0	0.007	0.003	0.004	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.004
3	980325	95857	0	0.011	1.0	0.013	0.003	0.002	0.002	0.002	0.001	0.002	0.004	0.002	0.002	0.003
4	980325	100016	0	0.011	1.0	0.002	0.002	0.009	0.003	0.002	0.002	0.001	0.003	0.002	0.002	0.003
5	980325	124725	0	0.011	1.0	0.012	0.007	0.002	0.006	0.003	0.015	0.007	0.004	0.002	0.003	0.006
6	980325	124916	0	0.011	1.0	0.002	0.002	0.002	0.001	0.002	0.001	0.002	0.001	0.002	0.001	0.002
7	980325	144833	0	0.011	1.0	0.004	0.009	0.004	0.003	0.002	0.002	0.003	0.002	0.002	0.004	0.004
8	980325	145058	0	0.011	1.0	0.004	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.003	0.002	0.002

Range K

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 521366

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	ONE	TWO	THREE	SIX SECOND READINGS FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980326	74744	0	0.011	1.0	0.005	0.005	0.004	0.006	0.004	0.005	0.004	0.004	0.005	0.005	0.005
2	980326	75122	0	0.011	1.0	0.008	0.008	0.007	0.007	0.007	0.006	0.007	0.006	0.007	0.019	0.008
3	980326	95753	0	0.011	1.0	0.019	0.005	0.006	0.006	0.005	0.006	0.006	0.006	0.005	0.006	0.007
4	980326	95938	0	0.011	1.0	0.026	0.015	0.007	0.005	0.009	0.007	0.007	0.006	0.008	0.008	0.010
5	980326	112334	0	0.011	1.0	0.020	0.039	0.020	0.007	0.005	0.005	0.007	0.006	0.009	0.005	0.012
6	980326	112509	0	0.011	1.0	0.006	0.006	0.006	0.005	0.005	0.006	0.006	0.005	0.006	0.005	0.006
7	980326	161447	0	0.011	1.0	0.006	0.006	0.007	0.006	0.006	0.006	0.006	0.006	0.005	0.006	0.006
8	980326	161551	0	0.011	1.0	0.008	0.006	0.006	0.007	0.006	0.007	0.007	0.008	0.007	0.006	0.007

Range K

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 521366

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	ONE	TWO	THREE	SIX SECOND READINGS FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980331	75353	0	0.011	1.0	0.017	0.013	0.011	0.010	0.011	0.010	0.012	0.013	0.012	0.010	0.012
2	980331	75906	0	0.011	1.0	0.012	0.010	0.009	0.010	0.010	0.010	0.009	0.011	0.010	0.010	0.010
3	980331	101656	0	0.011	1.0	0.017	0.011	0.011	0.010	0.010	0.011	0.010	0.010	0.010	0.010	0.011
4	980331	101759	0	0.011	1.0	0.009	0.010	0.010	0.010	0.010	0.010	0.009	0.011	0.010	0.009	0.010

Range I -Insitu

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 521366

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	ONE	TWO	THREE	SIX SECOND READINGS FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980403	102919	0	0.011	1.0	0.007	0.003	0.003	0.003	0.003	0.004	0.003	0.002	0.003	0.003	0.003
2	980403	103541	0	0.011	1.0	0.007	0.003	0.003	0.003	0.003	0.002	0.004	0.003	0.003	0.003	0.003
3	980403	125316	0	0.011	1.0	0.006	0.008	0.004	0.002	0.003	0.003	0.003	0.003	0.002	0.002	0.004
4	980403	125501	0	0.011	1.0	0.004	0.002	0.002	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002

Range I - InSitu

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 521366

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980406	65203	0	0.011	1.0	0.382	0.029	0.008	0.008	0.008	0.006	0.004	0.008	0.002	0.002	0.046
2	980406	65540	0	0.011	1.0	0.007	0.002	0.002	0.003	0.002	0.002	0.002	0.001	0.002	0.002	0.003
3	980406	85733	0	0.011	1.0	0.125	0.047	0.064	0.060	0.024	0.010	0.006	0.005	0.005	0.003	0.036
4	980406	90046	0	0.011	1.0	0.016	0.005	0.004	0.005	0.010	0.014	0.003	0.004	0.001	0.002	0.006
5	980406	153936	0	0.011	1.0	0.006	0.058	0.006	0.003	0.003	0.003	0.002	0.006	0.002	0.002	0.009
6	980406	154432	0	0.011	1.0	0.016	0.013	0.008	0.002	0.002	0.002	0.002	0.002	0.001	0.003	0.005

Range O

SEVENSON ENVIR MENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 521366

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980407	72451	0	0.011	1.0	0.022	0.007	0.007	0.005	0.004	0.006	0.005	0.002	0.002	0.002	0.006
2	980407	103651	0	0.011	1.0	0.007	0.002	0.003	0.001	0.002	0.005	0.002	0.002	0.001	0.001	0.003
3	980407	103757	0	0.011	1.0	0.004	0.001	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.002	0.002

Range O

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 521366

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980408	75948	0	0.011	1.0	0.009	0.009	0.002	0.003	0.003	0.002	0.004	0.006	0.001	0.002	0.004
2	980408	80245	0	0.011	1.0	0.003	0.001	0.001	0.002	0.002	0.001	0.008	0.002	0.008	0.004	0.003
3	980408	114858	0	0.011	1.0	0.008	0.003	0.001	0.002	0.003	0.006	0.003	0.002	0.001	0.001	0.003
4	980408	115007	0	0.011	1.0	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001
5	980408	130000	0	0.011	1.0	0.013	0.001	0.002	0.003	0.006	0.005	0.001	0.003	0.002	0.002	0.004
6	980408	130209	0	0.011	1.0	0.001	0.002	0.006	0.005	0.001	0.002	0.002	0.001	0.003	0.006	0.003

Range H - Insitu

SEVENSON ENVIRONM L SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	ONE	TWO	THREE	SIX SECOND FOUR	FIVE	READINGS SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980414	105048	0	0.010	1.0	0.003	0.020	0.003	0.003	0.003	0.004	0.003	0.004	0.002	0.003	0.005
2	980414	105406	0	0.010	1.0	0.005	0.003	0.005	0.004	0.004	0.008	0.011	0.003	0.006	0.010	0.006
3	980414	125529	0	0.010	1.0	0.003	0.003	0.002	0.003	0.002	0.003	0.002	0.003	0.003	0.002	0.003
4	980414	125634	0	0.010	1.0	0.003	0.002	0.003	0.003	0.002	0.003	0.002	0.003	0.003	0.002	0.003
5	980414	151953	0	0.010	1.0	0.004	0.029	0.003	0.006	0.003	0.002	0.003	0.003	0.002	0.003	0.006
6	980414	152058	0	0.010	1.0	0.009	0.008	0.004	0.005	0.005	0.003	0.002	0.002	0.003	0.005	0.005

Range J - InSitu.

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	ONE	TWO	THREE	SIX SECOND READINGS FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980418	74837	0	0.010	1.0	0.005	0.010	0.010	0.027	0.023	0.050	0.053	0.023	0.009	0.006	0.022
2	980418	75213	0	0.010	1.0	0.004	0.004	0.005	0.004	0.004	0.004	0.005	0.004	0.005	0.004	0.004
3	980418	101418	0	0.010	1.0	0.006	0.005	0.005	0.006	0.005	0.007	0.013	0.009	0.005	0.006	0.007
4	980418	101525	0	0.010	1.0	0.007	0.007	0.008	0.004	0.004	0.003	0.003	0.003	0.004	0.004	0.005
5	980418	130220	0	0.010	1.0	0.009	0.005	0.004	0.004	0.004	0.004	0.003	0.004	0.003	0.004	0.004
6	980418	130330	0	0.010	1.0	0.005	0.004	0.004	0.005	0.005	0.005	0.004	0.005	0.004	0.041	0.008

Range SE

SEVENSON ENVIR ENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	ONE	TWO	THREE	SIX SECOND FOUR	FIVE	READINGS SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980421	80039	0	0.010	1.0	0.010	0.006	0.006	0.005	0.006	0.007	0.007	0.004	0.003	0.004	0.006
2	980421	80649	0	0.010	1.0	0.004	0.003	0.004	0.005	0.004	0.003	0.004	0.004	0.003	0.003	0.004
3	980421	92750	0	0.010	1.0	0.004	0.003	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
4	980421	92856	0	0.010	1.0	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
5	980421	111535	0	0.010	1.0	0.004	0.003	0.003	0.003	0.003	0.004	0.003	0.003	0.004	0.003	0.003
6	980421	111713	0	0.010	1.0	0.004	0.003	0.003	0.004	0.003	0.004	0.003	0.003	0.003	0.003	0.003
7	980421	145435	0	0.010	1.0	0.013	0.004	0.004	0.004	0.011	0.005	0.005	0.006	0.004	0.004	0.006
8	980421	145544	0	0.010	1.0	0.005	0.004	0.003	0.004	0.004	0.004	0.006	0.012	0.008	0.012	0.006

Range SE

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980422	80804	0	0.010	1.0	0.010	0.007	0.011	0.009	0.008	0.008	0.007	0.006	0.006	0.006	0.008
2	980422	81102	0	0.010	1.0	0.007	0.006	0.009	0.008	0.006	0.005	0.005	0.006	0.005	0.006	0.006
3	980422	101511	0	0.010	1.0	0.006	0.006	0.005	0.006	0.005	0.004	0.004	0.005	0.004	0.008	0.005
4	980422	101615	0	0.010	1.0	0.005	0.004	0.004	0.004	0.004	0.003	0.005	0.004	0.005	0.004	0.004

Range SE

SEVENSON ENV ENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980428	93926	0	0.010	1.0	0.003	0.003	0.004	0.007	0.006	0.005	0.003	0.002	0.003	0.003	0.004
2	980428	94128	0	0.010	1.0	0.002	0.002	0.003	0.003	0.003	0.004	0.005	0.005	0.003	0.005	0.004
3	980428	112914	0	0.010	1.0	0.005	0.004	0.003	0.002	0.005	0.002	0.003	0.002	0.002	0.003	0.003
4	980428	113043	0	0.010	1.0	0.002	0.003	0.003	0.003	0.004	0.005	0.002	0.003	0.003	0.002	0.003
5	980428	131243	0	0.010	1.0	0.013	0.005	0.007	0.004	0.003	0.003	0.003	0.005	0.003	0.003	0.005
6	980428	131357	0	0.010	1.0	0.004	0.003	0.002	0.003	0.003	0.002	0.003	0.004	0.003	0.002	0.003
7	980428	160225	0	0.010	1.0	0.040	0.007	0.003	0.004	0.002	0.003	0.003	0.003	0.003	0.002	0.007
8	980428	160333	0	0.010	1.0	0.003	0.002	0.003	0.003	0.003	0.002	0.003	0.003	0.002	0.003	0.003

Range B.

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT			LOCA-	BACK-	K-				SIX SECOND	READINGS						AVERAGE
ID	DATE	TIME	TION	GROUND	VAL	ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	READING
1	980429	74226	0	0.010	1.0	0.005	0.003	0.003	0.004	0.003	0.004	0.003	0.004	0.003	0.003	0.004
2	980429	74840	0	0.010	1.0	0.007	0.006	0.006	0.004	0.004	0.003	0.004	0.005	0.005	0.003	0.005
3	980429	95506	0	0.010	1.0	0.009	0.005	0.003	0.003	0.003	0.003	0.003	0.003	0.004	0.002	0.004
4	980429	95724	0	0.010	1.0	0.009	0.005	0.005	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.004
5	980429	130134	0	0.010	1.0	0.008	0.016	0.036	0.029	0.011	0.005	0.005	0.004	0.004	0.003	0.012
6	980429	130259	0	0.010	1.0	0.004	0.004	0.004	0.003	0.004	0.003	0.003	0.003	0.002	0.004	0.003
7	980429	154130	0	0.010	1.0	0.014	0.012	0.014	0.011	0.011	0.009	0.009	0.008	0.009	0.006	0.010
8	980429	154608	0	0.010	1.0	0.019	0.003	0.003	0.002	0.003	0.003	0.003	0.003	0.003	0.004	0.005

Range B

SEVENSON ENVIR ENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT			LOCA-	BACK-	K-				SIX SECOND		READINGS					AVERAGE
ID	DATE	TIME	TION	GROUND	VAL	ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	READING
1	980430	74748	0	0.010	1.0	0.011	0.009	0.010	0.010	0.011	0.013	0.043	0.013	0.010	0.009	0.014
2	980430	75357	0	0.010	1.0	0.012	0.008	0.009	0.008	0.007	0.009	0.007	0.009	0.009	0.010	0.009
3	980430	92037	0	0.010	1.0	0.012	0.013	0.010	0.010	0.009	0.009	0.009	0.009	0.007	0.008	0.010
4	980430	92145	0	0.010	1.0	0.011	0.009	0.007	0.008	0.010	0.008	0.009	0.008	0.008	0.008	0.009
5	980430	92249	0	0.010	1.0	0.008	0.007	0.007	0.008	0.007	0.008	0.007	0.008	0.007	0.008	0.008
6	980430	125834	0	0.010	1.0	0.029	0.009	0.008	0.009	0.009	0.009	0.009	0.008	0.028	0.008	0.013
7	980430	125942	0	0.010	1.0	0.009	0.009	0.008	0.009	0.009	0.008	0.009	0.008	0.009	0.008	0.009
8	980430	152803	0	0.010	1.0	0.009	0.007	0.008	0.008	0.007	0.009	0.008	0.008	0.008	0.008	0.008
9	980430	153047	0	0.010	1.0	0.009	0.009	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008

Range B.

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980508	74112	0	0.010	1.0	0.013	0.007	0.005	0.008	0.003	0.003	0.003	0.004	0.003	0.003	0.005
2	980508	74855	0	0.010	1.0	0.019	0.007	0.002	0.003	0.014	0.013	0.005	0.006	0.004	0.003	0.008
3	980508	91755	0	0.010	1.0	0.005	0.004	0.003	0.002	0.002	0.001	0.001	0.002	0.001	0.001	0.002
4	980508	92222	0	0.010	1.0	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001
5	980508	111439	0	0.010	1.0	0.006	0.003	0.005	0.003	0.003	0.003	0.002	0.003	0.003	0.009	0.004
6	980508	111551	0	0.010	1.0	0.005	0.006	0.004	0.003	0.003	0.003	0.002	0.003	0.002	0.003	0.003
7	980508	131805	0	0.010	1.0	0.012	0.005	0.004	0.004	0.005	0.003	0.003	0.002	0.003	0.003	0.004
8	980508	131916	0	0.010	1.0	0.005	0.003	0.003	0.003	0.003	0.004	0.003	0.003	0.003	0.003	0.003
9	980508	145644	0	0.010	1.0	0.008	0.005	0.003	0.004	0.003	0.003	0.003	0.005	0.005	0.003	0.004
10	980508	145815	0	0.010	1.0	0.005	0.003	0.003	0.003	0.003	0.003	0.002	0.003	0.003	0.003	0.003

Range B - InSitu

SEVENSON ENVIRONM L SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCATION	BACKGROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980512	72645	0	0.010	1.0	0.011	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.004	0.003	0.004
2	980512	73409	0	0.010	1.0	0.041	0.005	0.004	0.004	0.005	0.009	0.004	0.004	0.003	0.004	0.008
3	980512	93236	0	0.010	1.0	0.009	0.006	0.006	0.006	0.004	0.005	0.004	0.004	0.007	0.009	0.006
4	980512	93345	0	0.010	1.0	0.005	0.004	0.008	0.004	0.004	0.004	0.003	0.004	0.004	0.004	0.004
5	980512	124336	0	0.010	1.0	0.005	0.004	0.003	0.003	0.003	0.003	0.008	0.004	0.004	0.005	0.004
6	980512	124439	0	0.010	1.0	0.006	0.005	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.004
7	980512	141527	0	0.010	1.0	0.008	0.005	0.004	0.004	0.004	0.005	0.004	0.005	0.009	0.006	0.005
8	980512	141633	0	0.010	1.0	0.005	0.004	0.004	0.004	0.004	0.003	0.004	0.004	0.005	0.006	0.004
9	980512	161317	0	0.010	1.0	0.010	0.006	0.006	0.005	0.006	0.005	0.005	0.006	0.005	0.005	0.006
10	980512	161509	0	0.010	1.0	0.005	0.005	0.006	0.005	0.005	0.007	0.028	0.011	0.009	0.007	0.009

Range B - Insitu

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980512	74748	0	0.027	1.0	0.006	0.008	0.009	0.007	0.006	0.006	0.006	0.005	0.006	0.006	0.007
2	980512	75418	0	0.027	1.0	0.005	0.006	0.006	0.005	0.006	0.006	0.006	0.006	0.005	0.008	0.006
3	980512	95709	0	0.027	1.0	0.009	0.010	0.005	0.006	0.006	0.021	0.006	0.006	0.008	0.007	0.008
4	980512	95827	0	0.027	1.0	0.006	0.006	0.006	0.008	0.014	0.009	0.012	0.007	0.006	0.007	0.008
5	980512	130016	0	0.027	1.0	0.012	0.017	0.021	0.019	0.006	0.006	0.009	0.007	0.052	0.010	0.016
6	980512	130319	0	0.027	1.0	0.004	0.005	0.005	0.005	0.004	0.005	0.004	0.004	0.004	0.005	0.005
7	980512	143015	0	0.027	1.0	0.008	0.011	0.019	0.015	0.011	0.009	0.013	0.010	0.006	0.007	0.011
8	980512	143150	0	0.027	1.0	0.010	0.008	0.015	0.011	0.010	0.008	0.005	0.008	0.007	0.006	0.009
9	980512	155046	0	0.027	1.0	0.009	0.010	0.008	0.008	0.007	0.008	0.007	0.007	0.007	0.010	0.008
10	980512	155426	0	0.027	1.0	0.010	0.007	0.009	0.007	0.009	0.015	0.009	0.008	0.009	0.008	0.009

Range P

SEVENSON ENVI[illegible]MENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCATION	BACKGROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980513	80200	0	0.010	1.0	0.008	0.007	0.005	0.006	0.007	0.007	0.008	0.014	0.004	0.019	0.009
2	980513	80507	0	0.010	1.0	0.004	0.005	0.004	0.004	0.003	0.004	0.004	0.004	0.004	0.005	0.004
3	980513	94339	0	0.010	1.0	0.004	0.004	0.004	0.003	0.004	0.004	0.003	0.005	0.004	0.004	0.004
4	980513	94442	0	0.010	1.0	0.004	0.013	0.003	0.004	0.004	0.004	0.003	0.004	0.003	0.004	0.005
5	980513	111217	0	0.010	1.0	0.006	0.006	0.005	0.004	0.004	0.004	0.004	0.004	0.004	0.003	0.004
6	980513	111351	0	0.010	1.0	0.004	0.008	0.004	0.005	0.004	0.004	0.003	0.004	0.005	0.003	0.004
7	980513	135651	0	0.010	1.0	0.012	0.005	0.005	0.005	0.005	0.007	0.009	0.005	0.004	0.004	0.006
8	980513	135757	0	0.010	1.0	0.004	0.006	0.004	0.005	0.008	0.004	0.004	0.005	0.011	0.065	0.012
9	980513	153849	0	0.010	1.0	0.012	0.005	0.005	0.009	0.009	0.012	0.006	0.007	0.006	0.005	0.008
10	980513	154006	0	0.010	1.0	0.012	0.006	0.004	0.004	0.004	0.004	0.004	0.003	0.004	0.004	0.005

Range E

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 08/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980515	74850	0	0.010	1.0	0.006	0.008	0.007	0.006	0.005	0.006	0.015	0.021	0.027	0.005	0.011
2	980515	75249	0	0.010	1.0	0.008	0.007	0.006	0.005	0.007	0.013	0.013	0.012	0.010	0.040	0.012
3	980515	93154	0	0.010	1.0	0.007	0.006	0.006	0.013	0.013	0.008	0.008	0.007	0.009	0.011	0.009
4	980515	93329	0	0.010	1.0	0.006	0.005	0.005	0.005	0.005	0.004	0.005	0.005	0.006	0.006	0.005
5	980515	104950	0	0.010	1.0	0.006	0.006	0.005	0.005	0.005	0.004	0.005	0.005	0.006	0.006	0.005
6	980515	105056	0	0.010	1.0	0.005	0.005	0.004	0.005	0.005	0.005	0.004	0.005	0.005	0.005	0.005
7	980515	131258	0	0.010	1.0	0.010	0.021	0.017	0.011	0.026	0.036	0.014	0.010	0.007	0.006	0.016
8	980515	131403	0	0.010	1.0	0.008	0.006	0.007	0.006	0.004	0.004	0.004	0.008	0.009	0.010	0.007

Range 0

SEVENSON ENVIRONM L SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980518	72916	0	0.010	1.0	0.008	0.007	0.008	0.006	0.006	0.006	0.006	0.007	0.008	0.007	0.007
2	980518	73126	0	0.010	1.0	0.006	0.008	0.009	0.007	0.006	0.005	0.006	0.007	0.008	0.007	0.007
3	980518	102926	0	0.010	1.0	0.018	0.014	0.016	0.021	0.014	0.014	0.011	0.010	0.009	0.007	0.013
4	980518	103044	0	0.010	1.0	0.007	0.007	0.006	0.006	0.006	0.007	0.007	0.007	0.007	0.006	0.007
5	980518	124238	0	0.010	1.0	0.019	0.017	0.017	0.013	0.014	0.010	0.011	0.012	0.013	0.020	0.015
6	980518	124406	0	0.010	1.0	0.010	0.011	0.011	0.009	0.009	0.010	0.008	0.009	0.008	0.011	0.010
7	980518	152345	0	0.010	1.0	0.012	0.011	0.010	0.011	0.014	0.012	0.012	0.010	0.009	0.009	0.011
8	980518	153014	0	0.010	1.0	0.040	0.043	0.024	0.106	0.058	0.023	0.026	0.016	0.013	0.028	0.038

Range C

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT			LOCA-	BACK-	K-				SIX SECOND		READINGS					AVERAGE
ID	DATE	TIME	TION	GROUND	VAL	ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	READING
1	980519	74156	0	0.010	1.0	0.007	0.006	0.007	0.018	0.015	0.025	0.015	0.014	0.022	0.015	0.014
2	980519	74438	0	0.010	1.0	0.007	0.015	0.019	0.020	0.015	0.024	0.018	0.019	0.019	0.017	0.017
3	980519	100304	0	0.010	1.0	0.009	0.006	0.005	0.004	0.006	0.009	0.005	0.004	0.003	0.005	0.006
4	980519	100416	0	0.010	1.0	0.005	0.003	0.003	0.004	0.003	0.005	0.016	0.013	0.024	0.007	0.008
5	980519	125107	0	0.010	1.0	0.007	0.251	0.119	0.011	0.005	0.005	0.004	0.003	0.005	0.005	0.042
6	980519	125306	0	0.010	1.0	0.023	0.030	0.005	0.004	0.004	0.007	0.009	0.004	0.002	0.002	0.009
7	980519	153941	0	0.010	1.0	0.004	0.009	0.005	0.023	0.030	0.031	0.008	0.005	0.009	0.123	0.025
8	980519	154115	0	0.010	1.0	0.021	0.002	0.002	0.005	0.002	0.005	0.015	0.008	0.003	0.005	0.007

Range C

SEVENSON ENVIRONM L SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA- TION	BACK- GROUND	K- VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980520	75039	0	0.010	1.0	0.004	0.004	0.003	0.003	0.002	0.003	0.003	0.012	0.016	0.013	0.006
2	980520	75406	0	0.010	1.0	0.005	0.003	0.005	0.005	0.005	0.008	0.007	0.007	0.007	0.005	0.006
3	980520	93427	0	0.010	1.0	0.021	0.012	0.007	0.005	0.012	0.015	0.016	0.019	0.040	0.008	0.016
4	980520	93608	0	0.010	1.0	0.013	0.007	0.010	0.009	0.006	0.008	0.010	0.006	0.007	0.006	0.008
5	980520	112455	0	0.010	1.0	0.003	0.004	0.009	0.002	0.003	0.002	0.005	0.002	0.003	0.003	0.004
6	980520	112639	0	0.010	1.0	0.074	0.140	0.015	0.003	0.003	0.005	0.005	0.006	0.006	0.007	0.026
7	980520	124719	0	0.010	1.0	0.039	0.052	0.104	0.035	0.023	0.018	0.025	0.029	0.027	0.026	0.038
8	980520	124900	0	0.010	1.0	0.010	0.007	0.004	0.003	0.006	0.036	0.027	0.048	0.013	0.019	0.017
9	980520	154538	0	0.010	1.0	0.025	0.015	0.010	0.011	0.016	0.023	0.045	0.013	0.011	0.007	0.018
10	980520	154914	0	0.010	1.0	0.028	0.030	0.043	0.026	0.012	0.008	0.006	0.005	0.005	0.002	0.017

Range C

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980521	73002	0	0.010	1.0	0.008	0.010	0.014	0.012	0.010	0.008	0.008	0.011	0.012	0.011	0.010
2	980521	73559	0	0.010	1.0	0.009	0.009	0.008	0.010	0.013	0.008	0.013	0.023	0.024	0.011	0.013
3	980521	100813	0	0.010	1.0	0.009	0.024	0.011	0.007	0.015	0.013	0.009	0.009	0.011	0.008	0.012
4	980521	101009	0	0.010	1.0	0.012	0.009	0.008	0.007	0.020	0.008	0.008	0.008	0.008	0.008	0.010

Range C

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980527	100652	0	0.010	1.0	0.005	0.006	0.008	0.005	0.004	0.007	0.010	0.006	0.009	0.008	0.007
2	980527	100809	0	0.010	1.0	0.005	0.006	0.003	0.003	0.004	0.002	0.003	0.004	0.003	0.002	0.004
3	980527	100919	0	0.010	1.0	0.004	0.003	0.004	0.004	0.004	0.002	0.004	0.003	0.004	0.005	0.004
4	980527	101052	0	0.010	1.0	0.006	0.004	0.006	0.009	0.011	0.010	0.005	0.006	0.003	0.004	0.006

Range C

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCATION	BACKGROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980528	74423	0	0.010	1.0	0.027	0.017	0.016	0.014	0.020	0.015	0.014	0.015	0.014	0.013	0.017
2	980528	74546	0	0.010	1.0	0.022	0.024	0.036	0.082	0.113	0.050	0.017	0.014	0.016	0.013	0.039
3	980528	94210	0	0.010	1.0	0.027	0.024	0.035	0.061	0.060	0.041	0.031	0.027	0.024	0.019	0.035
4	980528	94318	0	0.010	1.0	0.017	0.023	0.027	0.027	0.029	0.020	0.018	0.016	0.015	0.015	0.021
5	980528	110546	0	0.010	1.0	0.061	0.027	0.016	0.011	0.010	0.011	0.011	0.011	0.010	0.009	0.018
6	980528	110657	0	0.010	1.0	0.010	0.017	0.016	0.009	0.011	0.026	0.019	0.012	0.011	0.010	0.014
7	980528	141731	0	0.010	1.0	0.032	0.026	0.022	0.022	0.018	0.014	0.012	0.012	0.014	0.014	0.019
8	980528	141836	0	0.010	1.0	0.014	0.011	0.013	0.011	0.013	0.014	0.013	0.026	0.027	0.029	0.017

Range C

SEVENSON ENVIRONM L SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AVERAGE READING
1	980602	80203	0	0.028	1.0	0.008	0.005	0.004	0.004	0.003	0.003	0.003	0.003	0.002	0.004	0.004
2	980602	80455	0	0.028	1.0	0.002	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.004	0.002	0.002
3	980602	112031	0	0.028	1.0	0.005	0.003	0.003	0.005	0.003	0.003	0.004	0.002	0.003	0.003	0.003
4	980602	112137	0	0.028	1.0	0.003	0.003	0.002	0.003	0.003	0.003	0.002	0.003	0.002	0.003	0.003
5	980602	124930	0	0.028	1.0	0.010	0.004	0.005	0.004	0.009	0.059	0.023	0.028	0.020	0.006	0.017
6	980602	125100	0	0.028	1.0	0.016	0.033	0.033	0.019	0.021	0.032	0.030	0.019	0.013	0.010	0.023
7	980602	155934	0	0.028	1.0	0.014	0.006	0.008	0.008	0.004	0.018	0.006	0.004	0.006	0.006	0.008
8	980602	160720	0	0.028	1.0	0.018	0.012	0.006	0.021	0.025	0.008	0.006	0.005	0.006	0.005	0.011

Range A

SEVENSON ENVIRONMENTAL SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980604	74000	0	0.010	1.0	0.001	0.003	0.004	0.012	0.005	0.003	0.002	0.001	0.002	0.001	0.003
2	980604	74448	0	0.010	1.0	0.005	0.007	0.006	0.002	0.008	0.009	0.013	0.007	0.004	0.002	0.006
3	980604	92651	0	0.010	1.0	0.007	0.002	0.004	0.011	0.002	0.002	0.008	0.047	0.037	0.021	0.014
4	980604	92813	0	0.010	1.0	0.004	0.005	0.005	0.004	0.004	0.004	0.002	0.003	0.003	0.010	0.004
5	980604	111650	0	0.010	1.0	0.044	0.085	0.068	0.046	0.040	0.053	0.038	0.072	0.025	0.047	0.052
6	980604	111755	0	0.010	1.0	0.022	0.012	0.009	0.010	0.021	0.013	0.009	0.023	0.007	0.004	0.013

Range A.

SEVENSON ENVIRONME[illegible]L SERVICES
CAPE COD - MMR
PARTICULATE MONITORING

INSTRUMENT S/N: 0

DATE: 06/16/98

POINT ID	DATE	TIME	LOCA-TION	BACK-GROUND	K-VAL	SIX SECOND READINGS										AVERAGE READING
						ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	
1	980609	75048	0	0.010	1.0	0.004	0.002	0.002	0.003	0.001	0.002	0.002	0.005	0.006	0.002	0.003
2	980609	75505	0	0.010	1.0	0.004	0.002	0.002	0.002	0.002	0.005	0.002	0.003	0.002	0.002	0.003
3	980609	95319	0	0.010	1.0	0.013	0.009	0.067	0.397	0.218	0.168	0.045	0.072	0.022	0.006	0.102
4	980609	95422	0	0.010	1.0	0.073	0.058	0.032	0.004	0.006	0.004	0.003	0.003	0.003	0.003	0.019
5	980609	124655	0	0.010	1.0	0.049	0.017	0.014	0.036	0.009	0.003	0.001	0.002	0.002	0.001	0.013
6	980609	124817	0	0.010	1.0	0.008	0.005	0.004	0.009	0.005	0.001	0.003	0.004	0.123	0.012	0.017
7	980609	154448	0	0.010	1.0	0.034	0.011	0.006	0.006	0.008	0.006	0.088	0.029	0.011	0.014	0.021
8	980609	154849	0	0.010	1.0	0.008	0.004	0.004	0.004	0.004	0.004	0.006	0.005	0.005	0.005	0.005

Range A.

PHILIP ANALYTICAL SERVICES

ANALYTICAL DATA REPORTS

Sean

PHILIP
ANALYTICAL SERVICES

INDUSTRIAL HYGIENE
- EPA/NVLAP 101262-0
- AIHA ACCREDITATION NO. 8707

ENVIRONMENTAL TESTING
- NY DOH 10903
- PA DER 06-353
- NJ DEP 77678

March 19, 1998

Michael Locke
Sevenson Environmental Services
9245 Calumet Avenue
Suite 101
Munster IN 46321

Laboratory Project: 167867
Client Reference: Job# E-526: Lead by 7105

Dear Mr. Locke:

The samples which were logged in on 12-MAR-98 have been analyzed as requested. The analytical results are enclosed in the attached report.

Please note that any unused portion of the samples will be disposed after 18-APR-98, unless you have requested otherwise.

Thank you for the opportunity to provide these services to you. If you have any questions concerning this report, please contact a Client Services representative at 610/921-8833.

Sincerely,

Fred Usbeck, CIH
Director, Laboratory Services

4418 POTTSVILLE PIKE, READING PENNSYLVANIA 19605 610-921-8833 FAX 610-921-9667

PHILIP
ANALYTICAL SERVICES

INDUSTRIAL HYGIENE
- EPA/NVLAP 101262-0
- AIHA ACCREDITATION NO. 8707

ENVIRONMENTAL TESTING
- NY DOH 10903
- PA DER 06-353
- NJ DEP 77678

ANALYTICAL REPORT

Client: Sevenson Environmental Services

Report to: Michael Locke
Sevenson Environmental Services
9245 Calumet Avenue
Suite 101
Munster IN 46321

Project: 167867
Received: 12-MAR-98
Reported: 19-MAR-98

PURCHASE ORDER: IE 11164

Project Description: Job# E-526: Lead by 7105

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
211CCEU 1 Air Volume: 960 L Lab Sample: 1296414					
Lead, Total	< 0.0003	mg/sample	< 0.0003	mg/m3	7300M
211CCED 1 Air Volume: 960 L Lab Sample: 1296415					
Lead, Total	< 0.0003	mg/sample	< 0.0003	mg/m3	7300M
211CCED 2 Air Volume: 960 L Lab Sample: 1296416					
Lead, Total	< 0.0003	mg/sample	< 0.0003	mg/m3	7300M
227MMRGU 1 Air Volume: 652 L Lab Sample: 1296417					
Lead, Total	< 0.0003	mg/sample	< 0.0005	mg/m3	7300M
227MMRGD 1 Air Volume: 656 L Lab Sample: 1296418					
Lead, Total	< 0.0003	mg/sample	< 0.0005	mg/m3	7300M

Client: Sevenson Environmental Services
Project: 167867

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
227MMRGD 2 Air Volume: 636 L Lab Sample: 1296419					
Lead, Total	< 0.0003	mg/sample	< 0.0005	mg/m3	7300M
305MMRGU 1 Air Volume: 506 L Lab Sample: 1296420					
Lead, Total	< 0.0003	mg/sample	< 0.0006	mg/m3	7300M
305MMRGD 1 Air Volume: 500 L Lab Sample: 1296421					
Lead, Total	< 0.0003	mg/sample	< 0.0006	mg/m3	7300M
305MMRTP 1 Air Volume: 314 L Lab Sample: 1296422					
Lead, Total	< 0.0003	mg/sample	< 0.0010	mg/m3	7300M
310 BLANK Air Volume: 0 L Lab Sample: 1296423					
Lead, Total	< 0.0003	mg/sample			7300M
310MMRHU 1 Air Volume: 960 L Lab Sample: 1296424					
Lead, Total	< 0.0003	mg/sample	< 0.0003	mg/m3	7300M
310MMRHD 1 Air Volume: 960 L Lab Sample: 1296425					
Lead, Total	< 0.0003	mg/sample	< 0.0003	mg/m3	7300M

Client: Sevenson Environmental Services
Project: 167867

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
310MMRHD 2 Air Volume: 960 L Lab Sample: 1296426					
Lead, Total	< 0.0003	mg/sample	< 0.0003	mg/m3	7300M
310MMRTU 1 Air Volume: 960 L Lab Sample: 1296427					
Lead, Total	< 0.0003	mg/sample	< 0.0003	mg/m3	7300M
310MMRTD 1 Air Volume: 960 L Lab Sample: 1296428					
Lead, Total	< 0.0003	mg/sample	< 0.0003	mg/m3	7300M
310MMRTD 2 Air Volume: 960 L Lab Sample: 1296429					
Lead, Total	< 0.0003	mg/sample	< 0.0003	mg/m3	7300M
305MMRGD2 Air Volume: 500 L Lab Sample: 1296430					
Lead, Total	< 0.0003	mg/sample	< 0.0006	mg/m3	7300M

Final sample concentrations calculated from air volumes supplied on chain of custody.
< Indicates less than the limit of quantitation.

#001

PHILIP
ANALYTICAL SERVICES

4418 Pottsville Pike
Reading, PA 19605
610-921-8833
1-800-345-4026

INDUSTRIAL HYGIENE REQUEST FORM

167869

PURCHASE ORDER NUMBER
IE 11164

CLIENT INFORMATION
SEVENSON Environmental Services
9245 Calumet ave. Suite 101
MUNSTER, IN. 46321

INVOICE TO:
Same as Client information

LAB REPORT TO:
Same as Client information
Attn: Mike Locke

NUMBER OF SAMPLES: 17

TYPE OF SAMPLES: 37mm Cassette

LAB USE ONLY	CLIENT ID NUMBER, AIR VOLUME & ANALYSIS REQUESTED			SPECIAL INSTRUCTIONS
	211CCEU1	960 L	LEAD	NIOSH METHOD #7105
	211CCED1	960		
	211CCED2	960		
	227mmRGU1	652		
	227mmRGD1	656		
	227mmRGD2	636		
	305mmRGU1	506		
	305mmRGD1	500		
	305mmRGD2	500		
	305mmRTP1	314		
	310 Blank	0		
	310mmRHU1	960		
	310mmRHD1	960		
	310mmRHD2	960		
	310mmRTU1	960		
	310mmRTD1	960		
	310mmRTD2	960		

		Date	Time
Samples Relinquished by Sampler (Signature)	Samples Rec'd. by Courier (Signature) UPS		
Samples Relinquished by Courier (Signature)	Samples Rec'd. by Laboratory (Signature)	3/12/95	10:00
Samples Relinquished for Analysis (Signature)	Samples Rec'd. for Analysis (Signature)		
Samples Relinquished after Analysis (Signature)	Analyzed Samples Rec'd. for Retention (Signature)		

NOTES:
Reference Job NO./ E526

I am submitting these samples for testing, at the regular fee, within the customary turnaround time.

Initial for approval

I request priority handling of these samples, *have already scheduled them by telephone*, and authorize the additional fee for this service.

Initial for approval

LEASE REMEMBER TO INCLUDE PURCHASE ORDER NUMBER.

CLIENT TO RETAIN PART 3 OF FORM

PHILIP
ANALYTICAL SERVICES

INDUSTRIAL HYGIENE
- EPA NVLAP 101262-0
- AIHA ACCREDITATION NO. 8707

ENVIRONMENTAL TESTING
- NY DOH 10903
- PA DER 06-353
- NJ DEP 77678

April 1, 1998

Michael Locke
Sevenson Environmental Services
9245 Calumet Avenue
Suite 101
Munster IN 46321

Laboratory Project: 168268
Client Reference: Job #E526

Dear Mr. Locke:

The samples which were logged in on 26-MAR-98 have been analyzed as requested. The analytical results are enclosed in the attached report.

Please note that any unused portion of the samples will be disposed after 02-MAY-98, unless you have requested otherwise.

Thank you for the opportunity to provide these services to you. If you have any questions concerning this report, please contact a Client Services representative at 610/921-8833.

Sincerely,

Fred Usbeck, CIH
Director, Laboratory Services

ro: Michael Locke, Sevenson Environmental Services
rc: Aaron Brownell, Sevenson Environmental Services

PHILIP
ANALYTICAL SERVICES

INDUSTRIAL HYGIENE ENVIRONMENTAL TESTING

- EPA/NVLAP 101262-0
- AIHA ACCREDITATION NO. 8707
- NY DOH 10903
- PA DER 06-353
- NJ DEP 77678

ANALYTICAL REPORT

Client: Sevenson Environmental Services

Report to: Michael Locke
Sevenson Environmental Services
9245 Calumet Avenue
Suite 101
Munster IN 46321

Project: 168268
Received: 26-MAR-98
Reported: 01-APR-98

PURCHASE ORDER: IE 11164

Copy to: Aaron Brownell, Sevenson Environmental Services

Project Description: Job #E526

Sampled By: A. Brounell

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
313MMRIP1 Air Volume: 960 L Lab Sample: 1297898					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
317MMRTU1 Air Volume: 960 L Lab Sample: 1297899					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
317MMRTD1 Air Volume: 960 L Lab Sample: 1297900					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
317MMRTD2 Air Volume: 960 L Lab Sample: 1297901					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121

Client: Sevenson Environmental Services
Project: 168268

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
323MMRTU1 Air Volume: 960 L Lab Sample: 1297902					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
323MMRTD1 Air Volume: 960 L Lab Sample: 1297903					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
323MMRTD2 Air Volume: 960 L Lab Sample: 1297904					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
323MMRKU1 Air Volume: 960 L Lab Sample: 1297905					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
323MMRKD1 Air Volume: 960 L Lab Sample: 1297906					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
323MMRKD2 Air Volume: 960 L Lab Sample: 1297907					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121

PHILIP
ANALYTICAL SERVICES

INDUSTRIAL HYGIENE ENVIRONMENTAL TESTING

- EPA/NVLAP 101262-0
- AIHA ACCREDITATION NO. 8707
- NY DOH 10903
- PA DER 06-353
- NJ DEP 77678

Client: Sevenson Environmental Services
Project: 168268

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
325BLANK Air Volume: Blank Lab Sample: 1297908					
Lead, Total	< 0.008	mg/sample			ID121

Final sample concentrations calculated from air volumes supplied on chain of custody.
< Indicates less than the limit of quantitation.

168268 #002

PHILIP
ANALYTICAL SERVICES

4418 Pottsville Pike
Reading, PA 19605
610-921-8833
1-800-345-4026

INDUSTRIAL HYGIENE REQUEST FORM

PURCHASE ORDER NUMBER: IE 11164

[illegible]LIENT INFORMATION:
Sevenson Environmental Services
9245 Calumet ave. Suite 101
munster, IN. 46321

INVOICE TO: Same as Client info.

LAB REPORT TO: Same as Client info.
Attn. Mike Locke.

NUMBER OF SAMPLES: 11

TYPE OF SAMPLES: 37mm Cassette

LAB USE ONLY	CLIENT ID NUMBER, AIR VOLUME & ANALYSIS REQUESTED			SPECIAL INSTRUCTIONS
	313MMRIP1	960 L	LEAD*	NIOSH METHOD # ~~7~~ 7105
	317MMRTU1	960		
	317MMRTD1	960		
	317MMRTD2	960		
	323MMRTU1	960		
	323MMRTD1	960		
	323MMRTD2	960		
	323MMRKU1	960		
	323MMRKD1	960		
	323MMRKD2	960		
	325Blank	0		

		Date	Time
Samples Relinquished by Sampler (Signature)	Samples Rec'd. by Courier (Signature) UPS		
Samples Relinquished by Courier (Signature)	Samples Rec'd. by Laboratory (Signature) N Smith	3/26/98	1000
Samples Relinquished for Analysis (Signature)	Samples Rec'd. for Analysis (Signature)		
Samples Relinquished *after* Analysis (Signature)	Analyzed Samples Rec'd. for Retention (Signature)		

NOTES:
PlEASE Reference Job*E526
PlEASE FAX Copy to
[illegible]ron Brownell at
508-563-6655.
Thank you.

I am submitting these samples for testing, at the regular fee within the customary turnaround time.

ATB
Initial for approval

I request priority handling of these samples, *have already scheduled them by telephone*, and authorize the additional fee for this service.

Initial for approval

LEASE REMEMBER TO INCLUDE PURCHASE ORDER NUMBER.

CLIENT TO RETAIN PART 3 OF FOR

PHILIP
ANALYTICAL SERVICES

INDUSTRIAL HYGIENE **ENVIRONMENTAL TESTING**

- EPA/NVLAP 101262-0
- AIHA ACCREDITATION NO. 8707
- NY DOH 10903
- PA DER 06-353
- NJ DEP 77678

April 13, 1998

Michael Locke
Sevenson Environmental Services
9245 Calumet Avenue
Suite 101
Munster IN 46321

Laboratory Project: 168686
Client Reference: Job #E526

Dear Mr. Locke:

The samples which were logged in on 09-APR-98 have been analyzed as requested. The analytical results are enclosed in the attached report.

Please note that any unused portion of the samples will be disposed after 16-MAY-98, unless you have requested otherwise.

Thank you for the opportunity to provide these services to you. If you have any questions concerning this report, please contact a Client Services representative at 610/921-8833.

Sincerely,

Fred Usbeck, CIH
Director, Laboratory Services

ro: Michael Locke, Sevenson Environmental Services
rc: Aaron Brownell, Sevenson Environmental Services

4418 POTTSVILLE PIKE, READING, PENNSYLVANIA 19605 610-921-8833 FAX 610-921-9667

PHILIP
ANALYTICAL SERVICES

INDUSTRIAL HYGIENE ENVIRONMENTAL TESTING

- EPA/NVLAP 101262-0
- AIHA ACCREDITATION NO. 8707
- NY DOH 10903
- PA DER 06-353
- NJ DEP 77678

ANALYTICAL REPORT

Client: Sevenson Environmental Services

Report to: Michael Locke
Sevenson Environmental Services
9245 Calumet Avenue
Suite 101
Munster IN 46321

Project: 168686
Received: 09-APR-98
Reported: 13-APR-98

PURCHASE ORDER: IE 11329

Copy to: Aaron Brownell, Sevenson Environmental Services

Project Description: Job #E526

Sampled By: A.B.

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
331MMRTU1 Air Volume: 960 L Lab Sample: 1299605					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
331MMRTD1 Air Volume: 960 L Lab Sample: 1299606					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
331MMRTD2 Air Volume: 960 L Lab Sample: 1299607					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
331MMRIU1 Air Volume: 660 L Lab Sample: 1299608					
Lead, Total	< 0.008	mg/sample	< 0.01	mg/m3	ID121

Client: Sevenson Environmental Services
Project: 168686

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
331MMRID1 Air Volume: 654 L Lab Sample: 1299609 **Lead, Total**	< 0.008	mg/sample	< 0.01	mg/m3	ID121
331MMRID2 Air Volume: 654 L Lab Sample: 1299610 **Lead, Total**	< 0.008	mg/sample	< 0.01	mg/m3	ID121
403MMRIP1 Air Volume: 720 L Lab Sample: 1299611 **Lead, Total**	< 0.008	mg/sample	< 0.01	mg/m3	ID121
406MMRTU1 Air Volume: 960 L Lab Sample: 1299612 **Lead, Total**	< 0.008	mg/sample	< 0.008	mg/m3	ID121
406MMRTD1 Air Volume: 960 L Lab Sample: 1299613 **Lead, Total**	< 0.008	mg/sample	< 0.008	mg/m3	ID121
406MMRTD2 Air Volume: 960 L Lab Sample: 1299614 **Lead, Total**	< 0.008	mg/sample	< 0.008	mg/m3	ID121
406MMROU1 Air Volume: 960 L Lab Sample: 1299615 **Lead, Total**	< 0.008	mg/sample	< 0.008	mg/m3	ID121

Client: Sevenson Environmental Services
Project: 168686

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
406MMROD1 Air Volume: 960 L Lab Sample: 1299616					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
406MMROD2 Air Volume: 960 L Lab Sample: 1299617					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
408Blank1 Air Volume: Blank Lab Sample: 1299618					
Lead, Total	< 0.008	mg/sample			ID121

Final sample concentrations calculated from air volumes supplied on chain of custody.
< Indicates less than the limit of quantitation.

168686

PHILIP
ANALYTICAL SERVICES

4418 Pottsville Pike
Reading, PA 19605
610-921-8833
1-800-345-4026

INDUSTRIAL HYGIENE REQUEST FORM

PURCHASE ORDER NUMBER: IE 11329

CLIENT INFORMATION:
SEVENSON Environmental Services,
9245 Calumet ave. Suite 101
Munster, IN. 46321

INVOICE TO: Same as Client information

LAB REPORT TO: Same as client information
Attn: mike Locke

NUMBER OF SAMPLES: 14

TYPE OF SAMPLES: 37 mm Cassettes

LAB USE ONLY	CLIENT ID NUMBER, AIR VOLUME & ANALYSIS REQUESTED			SPECIAL INSTRUCTIONS
	331mmRTU1	960	LEAD	NIOSH METHOD # 7082
	331mmRTD1	960		
	331mmRTD2	960		
	331mmRIU1	660		
	331mmRID1	654		
	331mmRID2	654		
	403mmRIP1	720		
	406mmRTU1	960		
	406mmRTD1	960		
	406mmRTD2	960		
	406mmROU1	960		
	406mmROD1	960		
	406mmROD2	960		
	408Blank1	0		

Samples Relinquished by Sampler (Signature)		Samples Rec'd by Courier (Signature)		Date	Time
Samples Relinquished by Courier (Signature)		Samples Rec'd by Laboratory (Signature)	J. Warner	Date 4/9/98	Time 1120
Samples Relinquished for Analysis (Signature)		Samples Rec'd for Analysis (Signature)		Date	Time
Samples Relinquished *after* Analysis (Signature)		Analyzed Samples Rec'd for Retention (Signature)		Date	Time

NOTES:
Reference Job # E526,
PlEASE FAX Copy to
Aaron Brownell at
508-563-6655

I am submitting these samples for testing, at the regular fee, within the customary turnaround time.

AB
Initial for approval

I request priority handling of these samples, *have already scheduled them by telephone*, and authorize the additional fee for this service.

Initial for approval

PLEASE REMEMBER TO INCLUDE PURCHASE ORDER NUMBER.

CLIENT TO RETAIN PART 3 OF FORM

PHILIP
ANALYTICAL SERVICES

INDUSTRIAL HYGIENE ENVIRONMENTAL TESTING

- EPA NVLAP 101262-0
- AIHA ACCREDITATION NO. 8707
- NY DOH 10903
- PA DER 06-353
- NJ DEP 77678

May 4, 1998

Michael Locke
Sevenson Environmental Services
9245 Calumet Avenue
Suite 101
Munster IN 46321

Laboratory Project: 169311
Client Reference: Job #E526
Lead by NIOSH 7082

Dear Mr. Locke:

The samples which were logged in on 30-APR-98 have been analyzed as requested. The analytical results are enclosed in the attached report.

Please note that any unused portion of the samples will be disposed after 06-JUN-98, unless you have requested otherwise.

Thank you for the opportunity to provide these services to you. If you have any questions concerning this report, please contact a Client Services representative at 610/921-8833.

Sincerely,

F.W. Usbeck

Fred Usbeck, CIH
Director, Laboratory Services

ro: Michael Locke, Sevenson Environmental Services
rc: Aaron Brownell, Sevenson Environmental Services

PHILIP
ANALYTICAL SERVICES

INDUSTRIAL HYGIENE
- EPA/NVLAP 101262-0
- AIHA ACCREDITATION NO. 8707

ENVIRONMENTAL TESTING
- NY DOH 10903
- PA DER 06-353
- NJ DEP 77678

ANALYTICAL REPORT

Client: Sevenson Environmental Services

Report to: Michael Locke
Sevenson Environmental Services
9245 Calumet Avenue
Suite 101
Munster IN 46321

Project: 169311
Received: 30-APR-98
Reported: 04-MAY-98

PURCHASE ORDER: IE 11274

Copy to: Aaron Brownell, Sevenson Environmental Services

Project Description: Job #E526
Lead by NIOSH 7082

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
418mmRTU1 Air Volume: 782 L Lab Sample: 1302480					
Lead, Total	< 0.008	mg/sample	< 0.01	mg/m3	ID121
418mmRTD1 Air Volume: 792 L Lab Sample: 1302481					
Lead, Total	< 0.008	mg/sample	< 0.01	mg/m3	ID121
418mmRTD2 Air Volume: 792 L Lab Sample: 1302482					
Lead, Total	< 0.008	mg/sample	< 0.01	mg/m3	ID121
418mmRSEU1 Air Volume: 808 L Lab Sample: 1302483					
Lead, Total	< 0.008	mg/sample	< 0.010	mg/m3	ID121

Client: Sevenson Environmental Services
Project: 169311

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
418mmRSED1 Air Volume: 780 L Lab Sample: 1302484					
Lead, Total	< 0.008	mg/sample	< 0.01	mg/m3	ID121
418mmRSED2 Air Volume: 780 L Lab Sample: 1302485					
Lead, Total	< 0.008	mg/sample	< 0.01	mg/m3	ID121
418mmRSEP1 Air Volume: 634 L Lab Sample: 1302486					
Lead, Total	< 0.008	mg/sample	< 0.01	mg/m3	ID121
421mmRTU1 Air Volume: 960 L Lab Sample: 1302487					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
421mmRTD1 Air Volume: 960 L Lab Sample: 1302488					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
421mmRTD2 Air Volume: 960 L Lab Sample: 1302489					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
421mmRSEU1 Air Volume: 840 L Lab Sample: 1302490					
Lead, Total	< 0.008	mg/sample	< 0.010	mg/m3	ID121

Client: Sevenson Environmental Services
Project: 169311

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
421mmRSED1 Air Volume: 850 L Lab Sample: 1302491					
Lead, Total	< 0.008	mg/sample	< 0.009	mg/m3	ID121
421mmRSED2 Air Volume: 858 L Lab Sample: 1302492					
Lead, Total	< 0.008	mg/sample	< 0.009	mg/m3	ID121
428mmRTU1 Air Volume: 960 L Lab Sample: 1302493					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
428mmRTD1 Air Volume: 960 L Lab Sample: 1302494					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
428mmRTD2 Air Volume: 960 L Lab Sample: 1302495					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
428mmRBU1 Air Volume: 960 L Lab Sample: 1302496					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
428mmRBD1 Air Volume: 960 L Lab Sample: 1302497					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121

PHILIP
ANALYTICAL SERVICES

INDUSTRIAL HYGIENE ENVIRONMENTAL TESTING

- EPA/NVLAP 101262-0
- AIHA ACCREDITATION NO. 8707
- NY DOH 10903
- PA DER 06-353
- NJ DEP 77678

Client: Sevenson Environmental Services
Project: 169311

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
428mmRBD2 Air Volume: 960 L Lab Sample: 1302498					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
428mmRBP1 Air Volume: 960 L Lab Sample: 1302499					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
429Blank1 Air Volume: blank Lab Sample: 1302500					
Lead, Total	< 0.008	mg/sample			ID121

Final sample concentrations calculated from air volumes supplied on chain of custody.
< Indicates less than the limit of quantitation.

169311 # 004

PHILIP
ANALYTICAL SERVICES

4418 Pottsville Pike
Reading, PA 19605
610-921-8833
1-800-345-4026

INDUSTRIAL HYGIENE REQUEST FORM

PURCHASE ORDER NUMBER
IE [illegible] 11274

CLIENT INFORMATION
SEVENSON Environmental Services
9245 Calumet ave. Suite 101
Munster, IN. 46321

INVOICE TO:
Same as Client information

LAB REPORT TO:
Same as Client information
Attn: Mike Locke

NUMBER OF SAMPLES: 21

TYPE OF SAMPLES: 37mm filter Cassettes

LAB USE ONLY	CLIENT ID NUMBER, AIR VOLUME & ANALYSIS REQUESTED		SPECIAL INSTRUCTIONS
	418mmRTU1	782	
	418mmRTD1	792	
	418mmRTD2	792	
	418mmRSEU1	808	
	418mmRSED1	780	
	418mmRSED2	780	
	418mmRSEP1	634	
	421mmRTU1	960	
	421mmRTD1	960	
	421mmRTD2	960	
	421mmRSEU1	840	
	421mmRSED1	850	
	421mmRSED2	858	
	428mmRTU1	960	
	428mmRTD1	960	
	428mmRTD2	960	
	428mmRBU1	960	
	428mmRBD1	960	
	428mmRBD2	960	
	428mmRBP1	960	
	[redacted] ATB		
	429 Blank 1	0	

Samples Relinquished by Sampler (Signature)	Samples Rec'd. by Courier (Signature)	Date 4/29/98	Time 1600
Samples Relinquished by Courier (Signature) UPS	Samples Rec'd. by Laboratory (Signature)	Date 4-30-98	Time 1000
Samples Relinquished for Analysis (Signature)	Samples Rec'd. for Analysis (Signature)	Date	Time
Samples Relinquished *after* Analysis (Signature)	Analyzed Samples Rec'd for Retention (Signature)	Date	Time

NOTES:
PLEASE Reference Job #E526
PLEASE FAX COPY to Aaron Brownell at 508-563-6655

I am submitting these samples for testing, at the regular fee, within the customary turnaround time.

Initial for approval

I request priority handling of these samples, *have already scheduled them by telephone*, and authorize the additional fee for this service.

Initial for approval

508-563-6907

PLEASE REMEMBER TO INCLUDE PURCHASE ORDER NUMBER.

CLIENT TO RETAIN PART 3 OF FORM

PHILIP
ANALYTICAL SERVICES

INDUSTRIAL HYGIENE ENVIRONMENTAL TESTING

- EPA NVLAP 101262-0
- AIHA ACCREDITATION NO. 8707
- NY DOH 10903
- PA DER 06-353
- NJ DEP 77678

June 11, 1998

Michael Locke
Sevenson Environmental Services
9245 Calumet Avenue
Suite 101
Munster IN 46321

Laboratory Project: 170308
Client Reference: Job #526E/#005 (Lead by ID 121)

Dear Mr. Locke:

The samples which were logged in on 04-JUN-98 have been analyzed as requested. The analytical results are enclosed in the attached report.

Please note that any unused portion of the samples will be disposed after 11-JUL-98, unless you have requested otherwise.

Thank you for the opportunity to provide these services to you. If you have any questions concerning this report, please contact a Client Services representative at 610/921-8833.

Sincerely,

Fred Usbeck, CIH
Director, Laboratory Services

4418 POTTSVILLE PIKE, READING, PENNSYLVANIA 19605 610-921-8833 FAX 610-921-9667

PHILIP
ANALYTICAL SERVICES

INDUSTRIAL HYGIENE ENVIRONMENTAL TESTING

- EPA/NVLAP 101262-0
- AIHA ACCREDITATION NO. 8707
- NY DOH 10903
- PA DER 06-353
- NJ DEP 77678

ANALYTICAL REPORT

Client:	Sevenson Environmental Services	Project:	170308
		Received:	04-JUN-98
Report to:	Michael Locke Sevenson Environmental Services 9245 Calumet Avenue Suite 101 Munster IN 46321	Reported:	11-JUN-98
		PURCHASE ORDER:	IE 15217

Project Description: Job #526E/#005 (Lead by ID 121)

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
508 MMRTU 1 Air Volume: Lab Sample: 1307077					
Lead, Total	0.011	mg/sample			ID121
508 MMRTD 1 Air Volume: 884 L Lab Sample: 1307078					
Lead, Total	0.008	mg/sample	0.009	mg/m3	ID121
508 MMRTD 2 Air Volume: 884 L Lab Sample: 1307079					
Lead, Total	< 0.008	mg/sample	< 0.009	mg/m3	ID121
508 MMRBU 1 Air Volume: 160 L Lab Sample: 1307080					
Lead, Total	< 0.008	mg/sample	< 0.05	mg/m3	ID121
508 MMRBD 1 Air Volume: 682 L Lab Sample: 1307081					
Lead, Total	< 0.008	mg/sample	< 0.01	mg/m3	ID121

Client: Sevenson Environmental Services
Project: 170308

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
508 MMRBD 2					
Air Volume: 864 L					
Lab Sample: 1307082					
Lead, Total	< 0.008	mg/sample	< 0.009	mg/m3	ID121
512 MMRPU 1					
Air Volume: 960 L					
Lab Sample: 1307083					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
512 MMRPD 1					
Air Volume: 960 L					
Lab Sample: 1307084					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
512 MMRPD 2					
Air Volume: 960 L					
Lab Sample: 1307085					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
512 MMRBU 1					
Air Volume: 960 L					
Lab Sample: 1307086					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
512 MMRBD 1					
Air Volume: 960 L					
Lab Sample: 1307087					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
512 MMRBD 2					
Air Volume: 960 L					
Lab Sample: 1307088					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121

Client: Sevenson Environmental Services
Project: 170308

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
518 MMRTU 1 Air Volume: 960 L Lab Sample: 1307089					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
518 MMRTD 1 Air Volume: 1018 L Lab Sample: 1307090					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
518 MMRTD 2 Air Volume: 1018 L Lab Sample: 1307091					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
518 MMRCU 1 Air Volume: 960 L Lab Sample: 1307092					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
518 MMRCD 1 Air Volume: 960 L Lab Sample: 1307093					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
518 MMRCD 2 Air Volume: 960 L Lab Sample: 1307094					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
527 MMRCU 1 Air Volume: 318 L Lab Sample: 1307095					
Lead, Total	< 0.008	mg/sample	< 0.03	mg/m3	ID121

Client: Sevenson Environmental Services
Project: 170308

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
527 MMRCD 1 Air Volume: 318 L Lab Sample: 1307096					
Lead, Total	< 0.008	mg/sample	< 0.03	mg/m3	ID121
527 MMRCD 2 Air Volume: 318 L Lab Sample: 1307097					
Lead, Total	< 0.008	mg/sample	< 0.03	mg/m3	ID121
527 MMRCP 1 Air Volume: 330 L Lab Sample: 1307098					
Lead, Total	< 0.008	mg/sample	< 0.02	mg/m3	ID121
602 MMRTU 1 Air Volume: 960 L Lab Sample: 1307099					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
602 MMRTD 1 Air Volume: 960 L Lab Sample: 1307100					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
602 MMRTD 2 Air Volume: 960 L Lab Sample: 1307101					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
602 MMRAU 1 Air Volume: 960 L Lab Sample: 1307102					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121

Client: Sevenson Environmental Services
Project: 170308

	RESULT	UNITS	CONCENTRATION	UNITS	METHOD
602 MMRAD 1 Air Volume: 960 L Lab Sample: 1307103					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
602 MMRAD 2 Air Volume: 960 L Lab Sample: 1307104					
Lead, Total	< 0.008	mg/sample	< 0.008	mg/m3	ID121
603 Blank 1 Air Volume: 0 L Lab Sample: 1307105					
Lead, Total	< 0.008	mg/sample			ID121

Final sample concentrations calculated from air volumes supplied on chain of custody.
< Indicates less than the limit of quantitation.

170308 #005

PHILIP
ANALYTICAL SERVICES

4418 Pottsville Pike
Reading, PA 19605
610-921-8833
1-800-345-4026

INDUSTRIAL HYGIENE REQUEST FORM

PURCHASE ORDER NUMBER: IE 15217

CLIENT INFORMATION:
SEVENSON ENVironmental Services
9245 Calumet ave. Suite 101
MUnster, IN. 46321

INVOICE TO: Same as Client information

LAB REPORT TO: Same as Client information
Attn: Mike Locke.

NUMBER OF SAMPLES: 29

TYPE OF SAMPLES: 37 mm filter Cassettes

LAB USE ONLY	CLIENT ID NUMBER, AIR VOLUME & ANALYSIS REQUESTED				SPECIAL INSTRUCTIONS
	508mmRTU1		898	LEAD	USE METHOD ID 121.
	508mmRTD1		884		
	508mmRTD2	——	884		
	508mmRBU1		160		
	508mmRBD1		682		
	508mmRBD2	——	864		
	512mmRPU1		960		
	512mmRPD1		960		
	512mmRPD2	——	960		
	512mmRBU1		960		
	512mmRBD1		960		
	512mmRBD2	——	960		
	518mmRTU2		960		
	518mmRTD1		1018		
	518mmRTD2	——	1018		
	518mmRCU1		960		
	518mmRCD1		960		
	518mmRCD2	——	960		
	527mmRCU1		318		
	527mmRCD1		318		
	527mmRCD2		318		
	527mmRCP1	——	330		
	602mmRTU1		960		
	602mmRTD1		960		
	602mmRTD2	——	960		
	602mmRAU1		960		
	602mmRAD1		960		
	602mmRAD2		960		
	603Blank1		0		

Samples Relinquished by Sampler (Signature)	Samples Rec'd. by Courier (Signature)	Date 6/3/98	Time
Samples Relinquished by Courier (Signature) UPS	Samples Rec'd. by Laboratory (Signature)	Date 6/4/98	Time 0910
Samples Relinquished for Analysis (Signature)	Samples Rec'd. for Analysis (Signature)	Date	Time
Samples Relinquished *after* Analysis (Signature)	Analyzed Samples Rec'd. for Retention (Signature)	Date	Time

NOTES:
Reference Job #526E

I am submitting these samples for testing, at the regular fee, within the customary turnaround time.

AB
Initial for approval

I request priority handling of these samples, _have already scheduled them by telephone_, and authorize the additional fee for this service.

Initial for approval

LEASE REMEMBER TO INCLUDE PURCHASE ORDER NUMBER.

CLIENT TO RETAIN PART 3 OF FORM

APPENDIX C

PHOTOGRAPHIC DOCUMENTATION

Central Processing Area - Prior to Contractor Mobilization to Site

Central Processing Area - Ex-Situ Processing Equipment Operating

Central Processing Area - Ex-Situ Processing System

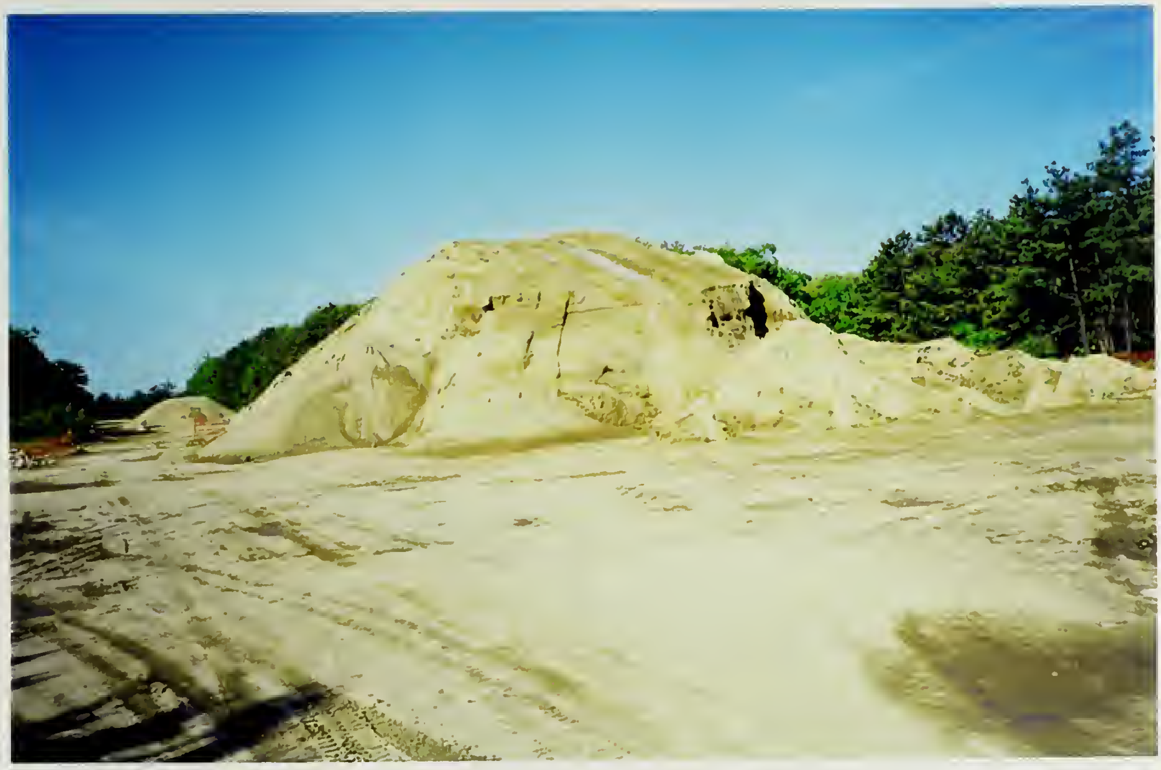
Central Processing Area - Ex-Situ Processing System Material Retained on 2-inch Screen

Central Processing Area - Ex-Situ Processing System Material Retained on No. 4 Screen

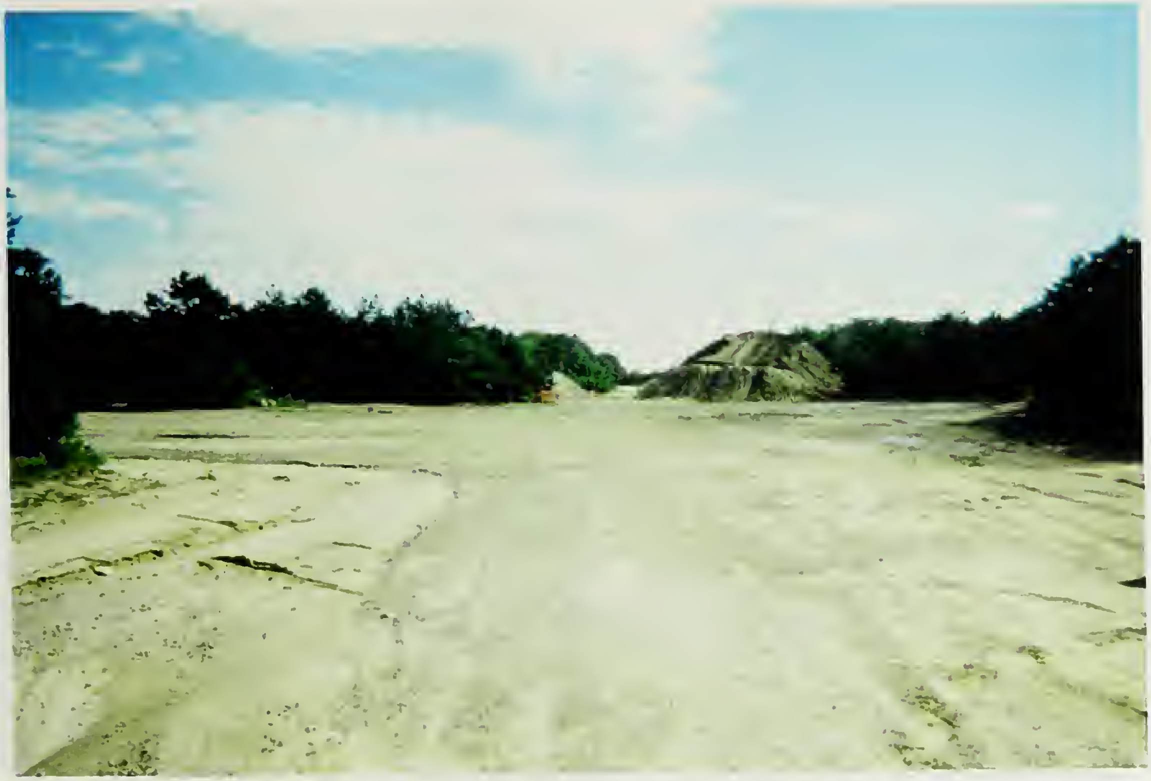
Central Processing Area - Ex-Situ Processing System Processed Soil Output

Central Processing Area - Stockpiles of Oversize Rock from Screening

Central Processing Area - Stockpiles of Material Retained on the No. 4 Screen



Central Processing Area - Ex-Situ Processed Soil Stockpile



Central Processing Area - After Completion of Demobilization Activities

In-Situ Processing - Excavation of Soils For Processing

In-Situ Processing - Addition of MAECTITE to Soils to be Processed

In-Situ Processing - Blending of Soils and MAECTITE

Range A - Pre-Excavation

Range A - During Excavation

Range A - Post-Excavation

Range A - Oversize Rock Being Sprayed with MAECTITE

Range B - Pre-Excavation

Range B - During Excavation

Range B - During Berm Reconstruction

Range B - During Berm Reconstruction

Range B - Berm Reconstruction Completed

Range C - Pre-Excavation

Range C - During Excavation

Range C - During Berm Reconstruction

Range C - Berm Reconstruction Completed

Range D - Pre-Excavation

Range D - During Excavation

Range D - Post-Excavation

Range E - Pre-Excavation

Range E - During Excavation

Range E - Excavation of Pop-up Target Protectors

Range E - Post-Excavation

Range E - Oversize Rocks Sprayed with MAECTITE

Range G - Pre-Excavation

Range G - During Excavation

Range G - Post-Excavation

Range H - Pre-Excavation

Range H - During Excavation

Range H - Post-Excavation

Range I - Pre-Excavation

Range I - During Excavation

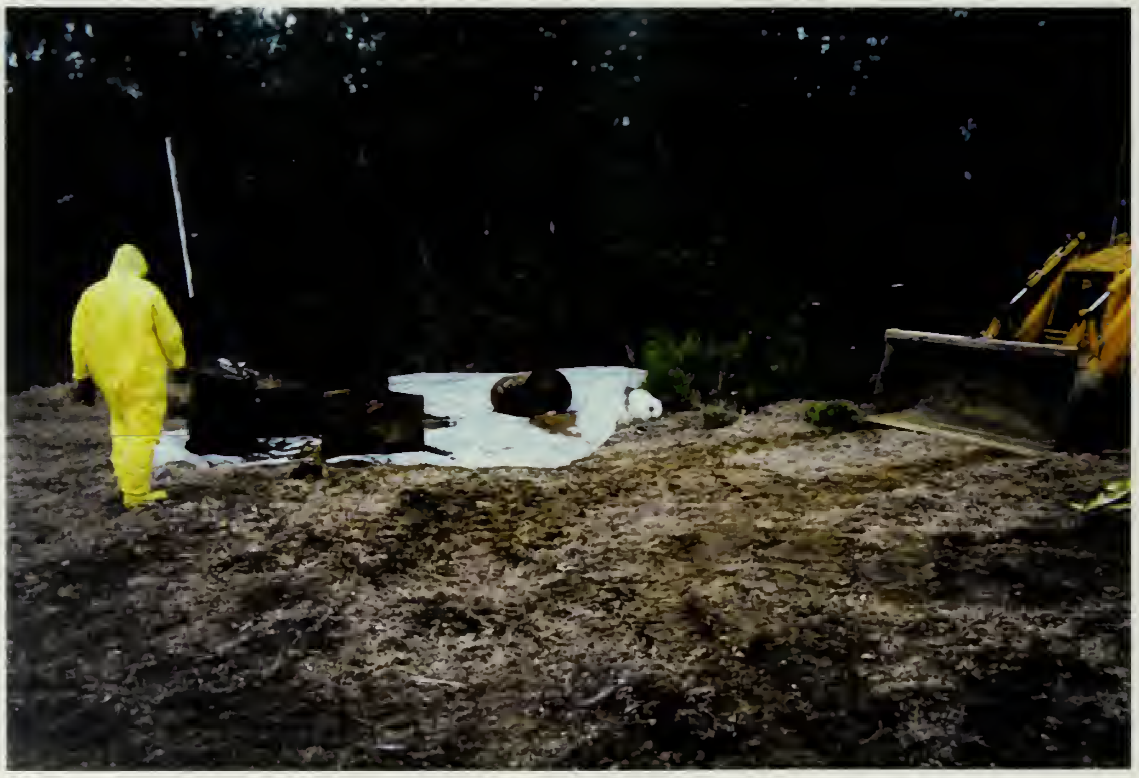
Range I - UXO Encountered During Excavation

Range I - Remnants of UXO After EOD Demolition In-Place at Toe of Secondary Berm

Range I - Post-Excavation

Range J - Pre-Excavation

Range J - During Excavation



Range J - Drums Encountered During Excavation of Left Side of Berm

Range J - Post-Excavation

Range K - Pre-Excavation

Range K - During Excavation

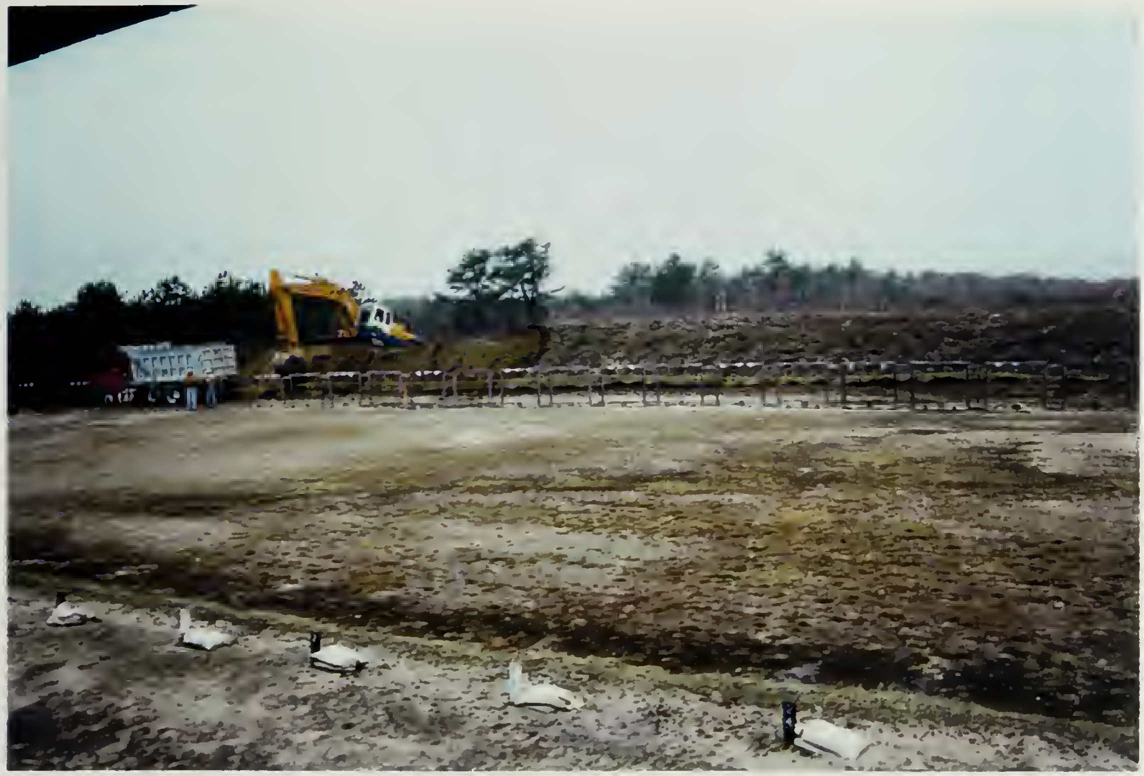
Range K - Post-Excavation

Range KD - Pre-Excavation

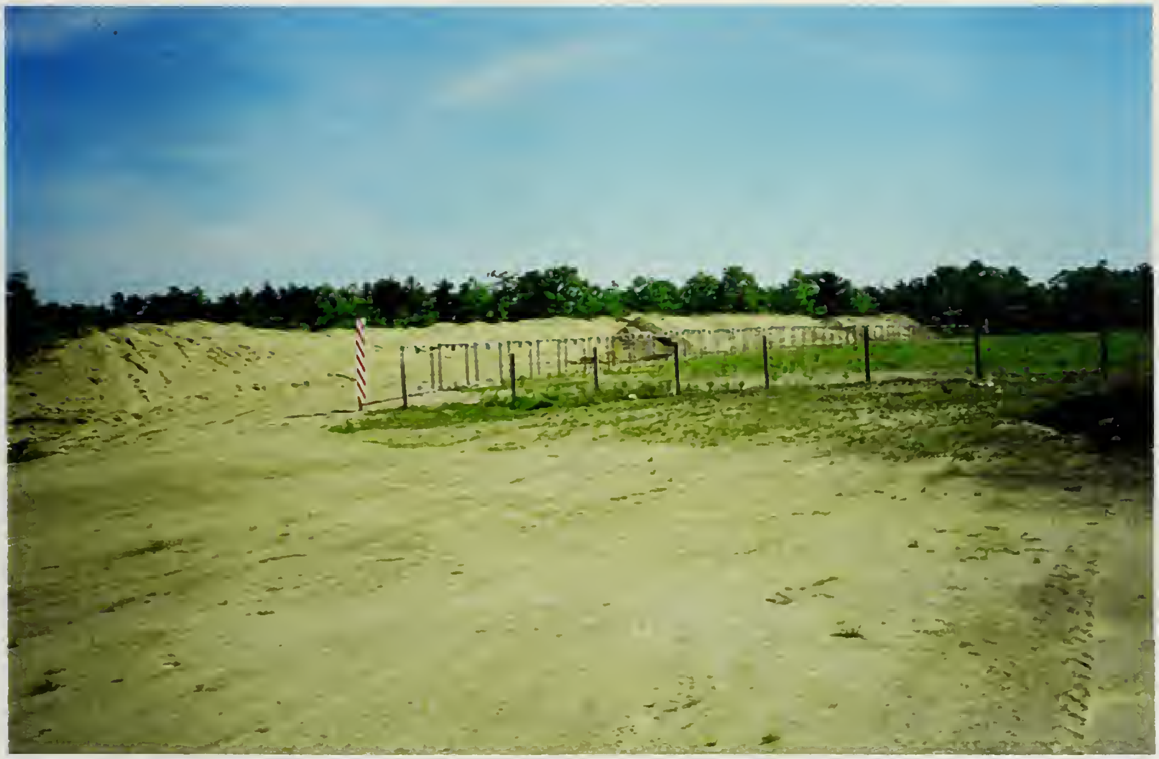
Range KD - During Grubbing and Chipping of Vegetation on Berm

Range KD - Post-Excavation

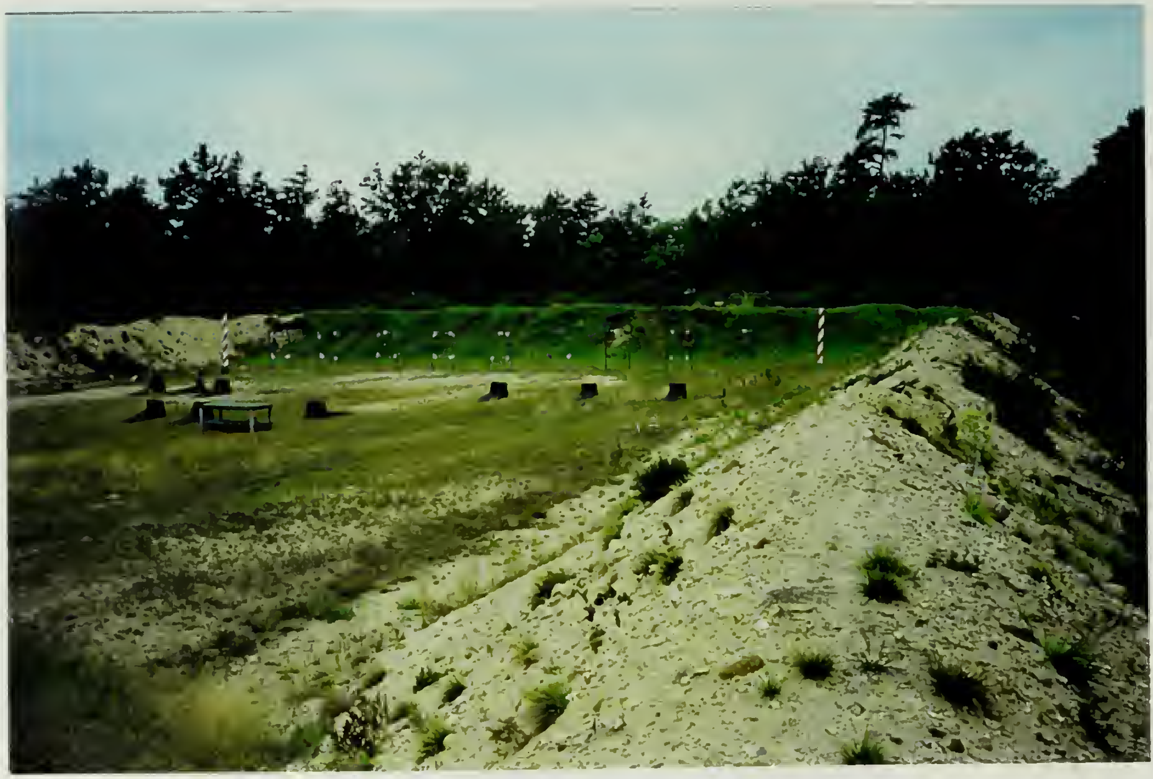
Range N - Pre-Excavation



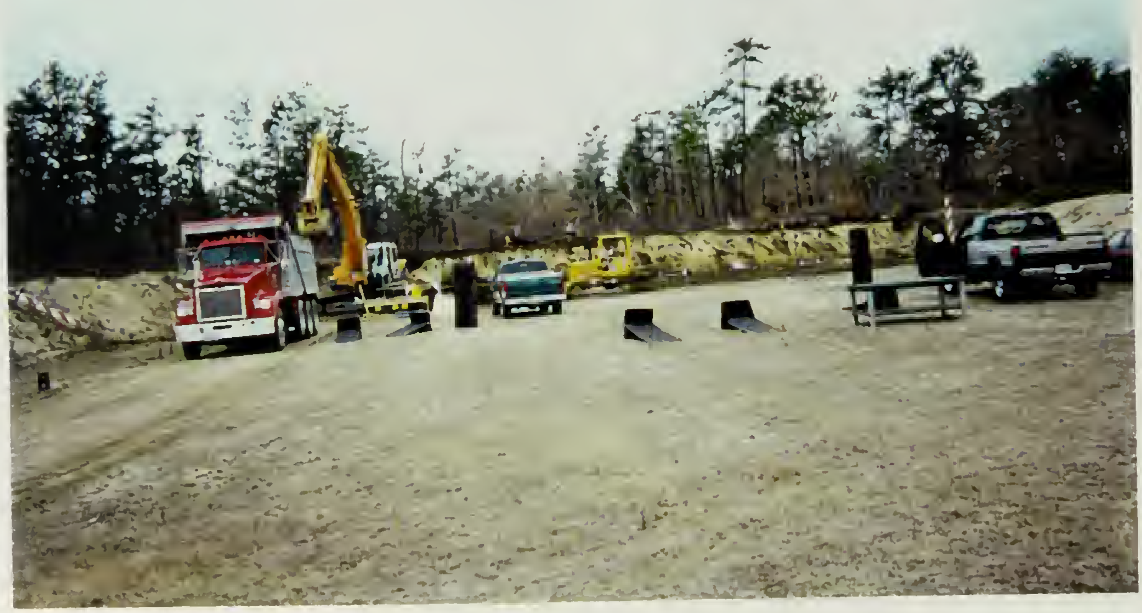
Range N - During Excavation



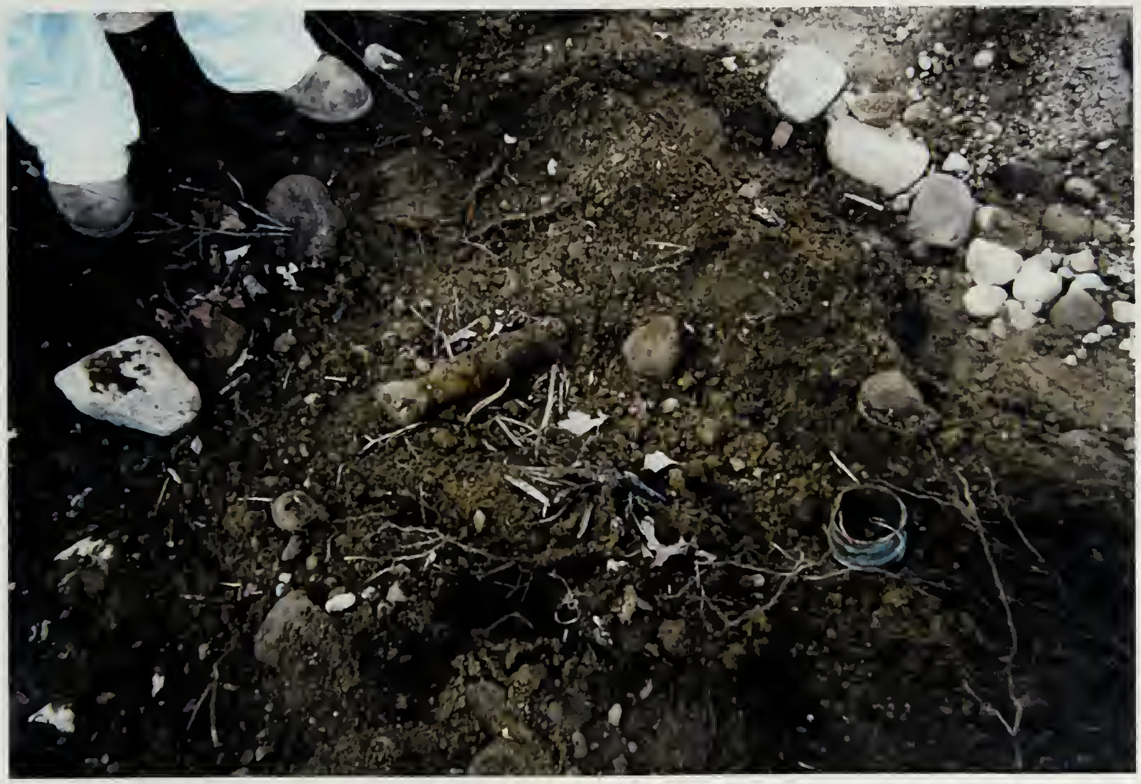
Range N - Post-Excavation



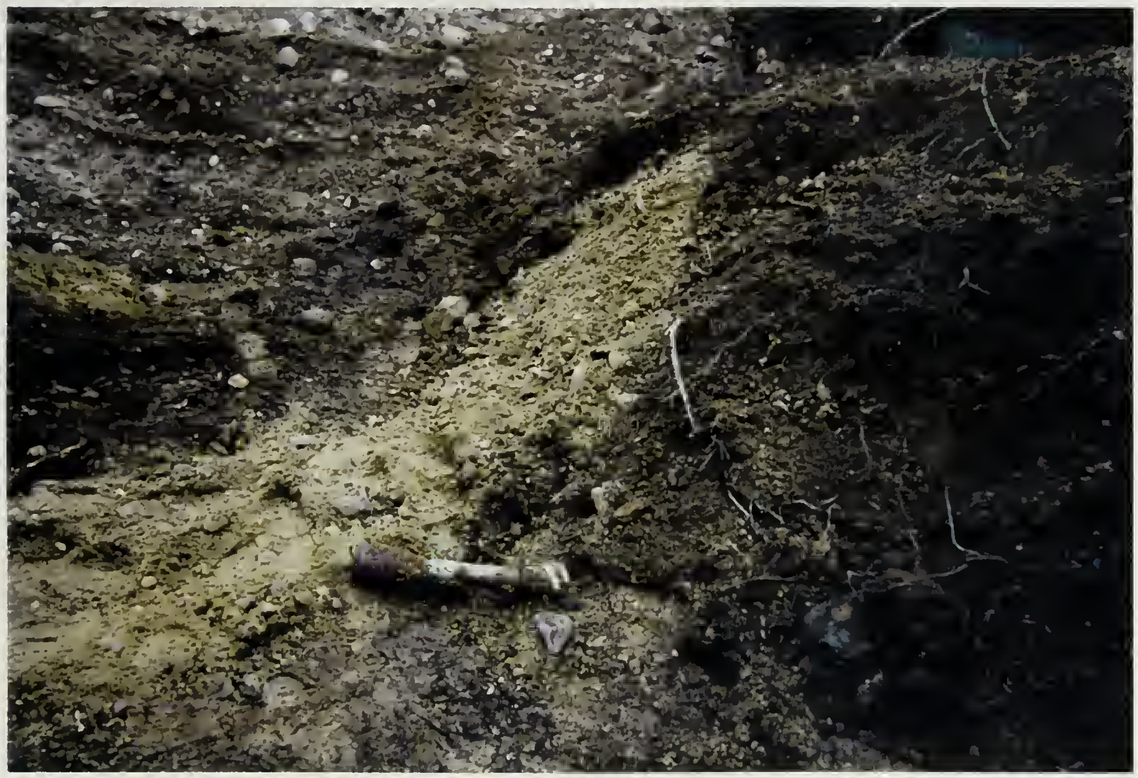
Range O - Pre-Excavation



Range O - During Excavation



Range O - Suspected UXO Related Materials Encountered During Excavation



Range O - Suspected UXO Related Materials Encountered During Excavation

Range O - Post-Excavation

Range P - Pre-Excavation

Range P - During Excavation

Range P - Post-Excavation

Range SE/SW - Pre-Excavation

Range SE/SW - During Excavation of Target Pop-Up Protectors